The Magazine of

STANDARDS

The Magazine of
STANDARDS
Formerly Standardization

March 1954 Volume 25, No. 3

Published monthly by American Standards Association, Incorporated
70 East 45th Street, New York 17, N. Y.

OFFICERS

Roger E. Gay, *President*
Edward T. Gushée, *Vice-President*
Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director and Secretary*
Cyril Ainsworth, *Technical Director and Assistant Secretary*
Ruth E. Mason, *Editor*
Jessie F. Egan, *Production Editor*

In This Issue

Part I

Company Programs —
Standardization and Progress in the Application of Tools 77
An Identifying Numbering System for Purchased Material. *By P. J. Callan* 78
Research to Check Accuracy of Measurements 94
ASA Board Authorizes Companies to Use Certification Mark 97
Gaillard Seminar 94

Use of Standards —
Court Rules on Use of Certification Marks 86
Adherence to Standards Urged 86
Recent Rulings on Unusual Accidents 87
Cases for Comment 94
Companies May Use ASA Certification Mark 97

New Standards —
Need Standards for All Textiles, Conference Says 82
Committee Completes Work on Neoprene-Type Wire, Cable 85

Government —
Government Standards, No. 7. New Concept of Building Code Drafting and Administration. *By Samuel P. Kaidanovsky* 89
Hepenstal Appointed 92
Data on Construction and Building Materials Available 92

International Organization for Standardization —
Methods, records, and terminology (ISO cooperation with ECAFE) 97
Tests for Colorfastness 98
February 23, seventh anniversary 98
National Standards Bodies (elected on Council) 98

Other Countries —
Safety Standards in Chile. *By Morris B. Wallach* 93
From Other Countries 95
Standards Outlook. *By Leo Moore* 103
What Is Your Question? 97

Associations and Societies —
The Twenty-fourth Annual Safety Convention and Exposition 98

Books 99

American Standards Activities —
American Standards. Status as of February 10, 1954 100
What's New on American Standard Projects 102

Part II List of American Standards

MARGINAL NOTES

The 1954 List of American Standards —

Here is your up-to-date list of American Standards, bound separately as Part 2 of this issue. It includes the current American Standards and American War Standards. Most recent report placed the total at 1402. Among the many important new and revised standards listed in this edition are included a number on tools; pipe and fittings; wire; transformers; electrical insulation materials; conduit; soaps and detergents; photography; symbols; gas-burning appliances; safety; and acoustics.

For Your Information —

A materials classification system that works is described by Philip Callan of Eastman Kodak on page 78. It contains suggestions that will be a real help if you are wondering how to get your organization started on a system of classification.

Mr Callan, who is head of Eastman's materials standards department, has had more than 25 years experience in various engineering aspects of the company's operations.

During the war he left Kodak Park to help run the Holston Ordnance Works, first as project engineer for refrigeration and power plant design, and, through successive promotions finally as superintendent of the engineering and maintenance division.

When he returned to Kodak Park in 1945 it was as supervisor of power development in charge of all power and services design. A year later he was appointed head of the company's materials standards.

ASA
Reg. U. S. Pat. Off.

Single copy 50¢. $7.00 per year (foreign $8.00). Schools and libraries $5.00 (foreign $6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879.

Opinions expressed by authors in THE MAGAZINE OF STANDARDS *are not necessarily those of the American Standards Association.*

Western Electric's regional conferences offer an unusual opportunity for exchange of ideas that improve coordination of practices and are a phase of standardization in themselves. At one of the recent conferences H. F. Culver had some interesting things to say about these meetings and the problems they discuss (page 77).

Part 7 of the Government Standards series (page 89) describes New York State's new Building Code. After this feature was prepared, word came from Albany that New York's Governor Dewey had given high praise to the Code. The occasion was a ceremony at which the Village of Tarrytown became the one-hundredth community to adopt it. The Code has proved to be the means for "real savings" in construction costs, the Governor said. It is the "first effective action taken to cut through the building code mess that has plagued the industry for 50 years."

The Unknown Identified —

It is pleasant to be able to repair an omission which was unhappily necessary at the time the January issue of THE MAGAZINE OF STANDARDS was published. Since then, the unidentified gentleman standing between J. R. Townsend and C. E. Hilton (center picture, page 20) has been recognized. This visitor to the Fourth National Standardization Conference is Dr A. F. Cone, Manager, Quality Assurance Department, Sandia Corporation, Albuquerque, New Mexico.

Nominations Invited for Awards

ALL members of the American Standards Association are invited to send in nominations for the 1954 recipients of the Howard Coonley Medal and the Standards Medal. Nominations should be in the hands of the Managing Director of the Association before July 1, 1954.

The Howard Coonley Medal is awarded each year to an executive who by his practice and preachments has furthered the national economy through voluntary standardization. Recipients have been The Honorable Herbert Hoover, Mr Howard Coonley, Mr William Batt, and Senator Ralph E. Flanders.

This gold medal was established by the ASA Board of Directors in 1950 through the support of certain industrial organizations. It was named in honor of Mr Coonley, who during his 22 years as member of ASA's Board of Directors had become recognized both nationally and internationally for his leadership in standardization.

The Standards Medal, also a gold medal, is for award to an individual who has shown leadership in the development and application of voluntary standards. It was established in 1951, using Association funds. It has been awarded to such well known leaders in standardization as Frank O. Hoagland, Perry L. Houser, and the late Dr P. G. Agnew.

Nominations should be submitted in quadruplicate on plain paper without indication as to the source of the nomination. Each nomination should be accompanied by a letter of transmittal.

In order to provide complete and comparable data, forms can be obtained from ASA for filing nominations.

The Company Member Conference Spring Meeting —

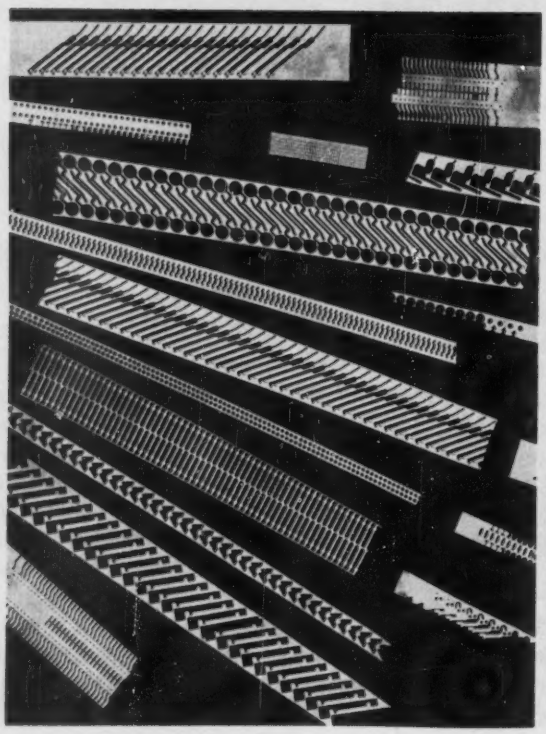
The Spring Meeting of the Company Member Conference (May 10 and 11) is being held at Rochester, with the Eastman Kodak Company handling the arrangements. Because of the enthusiastic response to the Annual Meeting of the Conference in October, the meeting at Rochester is being organized along the same lines. Subjects of special interest to the company standards people will be discussed. There will be one important difference, however. That is, ample time will be allowed for discussion, comments, and questions. Details of the program will be given in the April issue.

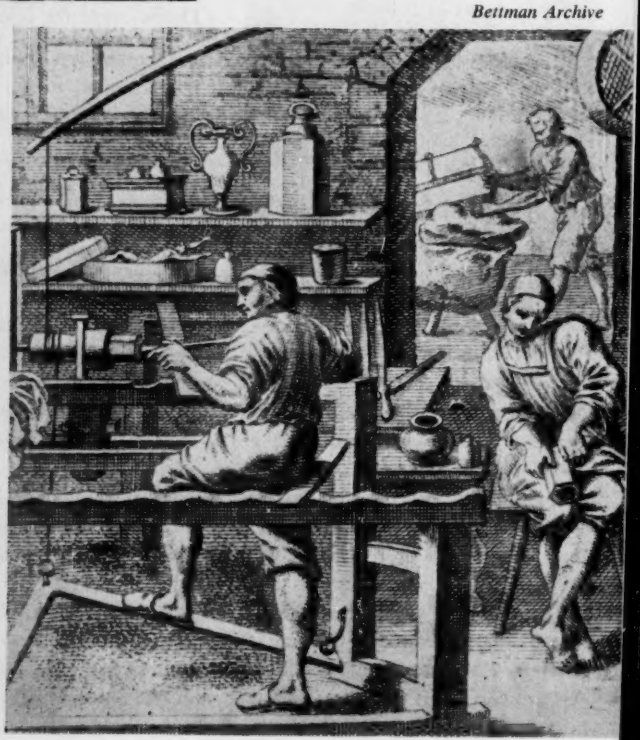
The Front Cover —

These rolls of photographic paper are typical of some of the sights members of the Company Member Conference will view when they visit the Eastman Kodak Company in May. In connection with Mr Callan's article in this issue, Eastman writes: "The manufacturing of photographic paper at Eastman Kodak Company is facilitated by the standardization of the many materials required for its production."

Today's electron-powered tools *would seem like magic to workmen of the Seventeenth Century who operated their tools by hand. Electron drill (left) disintegrates hard metal. No chips fly; a blue electric arc shows machine is doing its job. Western Electric uses tool to rough-shape metal of extreme hardness. Tools for Western Electric punch presses perform multiplicity of stamping and forming operations. Below, left, are strips of metal from which parts for telephone equipment have been stamped out. In Seventeenth Century, turning metals was a hobby of noblemen as well as a profession of craftsmen. Copper engraving, 1682 (below) shows lathe for turning alabaster and light metals.*

Bettman Archive





Standardization and Progress in the Application of Tools

THE Western Electric Company, manufacturing unit of the Bell Telephone System, has found the inter-works type of conference to be an effective instrument in emphasizing and implementing standardization and coordination programs. Some of the larger of such conferences are held on an annual basis, the geographical location being ordinarily rotated in turn among the various Works.

Their Interplant Tool and Gage Conference is an example of this type of coordinating activity. It is organized and planned by the organization of the Assistant Superintendent of Manufacturing Engineering at the Works where engineering standardization for matters of this type is headquartered. A total of about 50 representatives from all interested manufacturing locations convene for two full days of discussions relating to new developments in the fields of tool and gage design, materials, construction, maintenance and inspection, and to exchange ideas and the results of individual experience in these areas. This provides an opportunity for all to learn of current developments at other Company plants, thus enabling the various groups to keep uniformly abreast in adopting progressive procedures. Pertinent related subjects, such as, for example, maintenance procedures and efforts toward reducing repair costs are frequently discussed along with the detailed technical developments. While the fullest realization of economic benefits of standardization are one of the basic goals of these conferences, it is emphasized that Western Electric Company standards are not "frozen," as such static standards would only result in retarding future progress.

Only a few formalized papers are prepared and presented, the basic feature of the conference being the informal type of discussion, based solely on recognition by the chairman. Thoroughly planned and carefully prepared agenda are utilized, however, the subjects for discussion having been collectively proposed by the participating Works' representatives and agreed upon by them in advance of the meeting. It follows that the discussions, while spontaneous, are thus maintained in the pre-planned channels on an orderly, scheduled basis to permit completing the entire agenda.

Continuous recording of the discussions is employed as an aid in preparation of detailed minutes, which, with illustrations of the charts and photographs projected during the meeting, are published and distributed to various levels of interested organizations.

At the most recent conference, held at their Baltimore, Maryland, Works, H. F. Culver highlighted the benefits of these conferences, with particular respect to their relationship to standardization activities, and to the fields of endeavor which should prove to be most rewarding in the future development of tool and gage design and construction techniques. Mr Culver is Department Chief, Planning Standards and Apparatus Drafting, Hawthorne Works, Chicago.

Referring to the benefits of standardization, Mr Culver told the plant representatives that the Western Electric Company Tool Conference is a standards project which in itself embraces the concept of pooled experience. It serves the cause of standardization by providing for an interchange of ideas on tool and gage design, construction and maintenance, and makes such information available throughout the Western Electric Company. He said, in part:

". . . such conferences as these reflect a general trend throughout industry to recognize this pooling of ideas as being vital to the progressive economic health of any large business venture. Know-how is one of the most valuable assets to any business, but when it is recorded, placed in the form of Manufacturing Standards, and made available generally, it becomes many-fold more valuable.

"On occasion, it might be helpful if the name 'Manufacturing Standards' might be modified somehow to indicate that they are essentially additions to capital. These standards constitute a continuing source of the essential results of accumulated day-to-day experience ready for use in our engineering manufacturing operations, and they are more permanent even than machinery. They are cost reduction on a continuous basis, — not temporarily for one process or one product, — but for all time and for the entire Company.

"Recently, information concerning the average hole sizes to be expected from commercial drills of standard sizes was needed in connection with use of the somewhat larger taps being introduced by manufacturers for use in producing Unified and American threaded holes. This information has been contained in our Western Electric Standards for nearly 20 years, but apparently has not been made generally available in industry. This is one example of the fact that published information on standards for manufacturing planning use is relatively meager, and it is extremely important that further effort be put forth to make information of the type included in such standards generally available.

"The tool making art is an ancient one and, in fact, probably constitutes the foundation of our civilization. Herein, however, lies one of the strangest anomalies of our day, in that, over the long haul, the recorded and commonly available knowledge has been relatively fragmentary and of recent origin. Tool design and construction have been considered to be arts within the realm of individual aptitude, and progress over the years has actually been based primarily on day-to-day experience and on the accumulated and handed-down knowledge gained on the job by the members of specialized groups of designers and artisans. It is therefore to be expected that progress in these fields should be considered the result of individual effort, and not directly allied to the mass production of 'consumer' goods. Perhaps that is why science has only recently entered the picture, and why exchange of common knowledge on an industry-basis is very recent indeed. We are in fact only about 50 years removed, in point of progress of such nature, from the guild halls which flourished in the trades so long ago. The American Society for Metals dates back only to the period following World War I, and the American Society of Tool Engineers is even more recent."

Mr Culver foresees the possibility that large gains may be experienced in the near future in tool design and construction as the result of aid from the physical chemist and application of mechanical engineering analysis to shop practices. The most likely sources of long range improvements in tooling for machining operations, he anticipates, will be in connection with the following: recognition of the damage done to high speed steels through severe grinding operations; increased knowledge of the electrochemistry of surfaces; development of the relieving effects of high-frequency, short wave-length, vibratory intermittent feeding in machining; and a still more acute recognition, on the other hand, of the seriousness of vibrations of relatively large amplitudes as adversely affecting the economical and high-quality working of materials.

An Identifying Numbering

FROM what I have been able to learn about numbering systems for identifying items of material, all have one thing in common,—they are all different from one another. They differ because the purposes for which they were designed are different.

It seems appropriate, therefore, to begin the explanation of the code being used in Eastman Kodak Company by outlining some of the features that we wanted to incorporate to facilitate the operation of our system.

In the first place, the numbers apply only to items of purchased materials, either raw materials for production, such as sheet and strip metals, chemicals, plastics, or finished items for maintenance and supply, such as structural steel, hardware, piping, lubricants, electrical items, laboratory supplies. Many of these are stocked by the Stores Department. The code does not include, or have anything to do with, production parts, parts in process, products for sale, capital assets, or the like.

About four years ago Eastman Kodak Company decided to overhaul the numbering system, or rather *systems,* then in use in the Standards Catalog and Stores Department. The Standards Catalog contained about 30,000 approved items and was using a 7-digit numeric code. The Stores system, containing about 50,000 items, was using an alpha-numeric system varying from 5 to 7 letters and digits. Each of these systems was reasonably satisfactory for the specific purpose intended, but the dual system was a disadvantage. Furthermore, neither system was particularly well adapted to the punch card system of stock control which was being given serious consideration at the time. We therefore decided to develop a single new system which would meet the main requirements of all phases of the purchased materials control problem.

The following points were laid down as objectives to be met by the new system. It will be immediately obvious that certain ultimate compromises were necessary, because no single solution could completely satisfy all the requirements. All the points are included, however, to show the scope and complexity of the problem:

1. All numbers should be significant. This might require from 15 to 20 digits in many cases, such as for cutting tools, antifriction bearings, etc. Nevertheless, we also wanted the number to be as short as possible to reduce clerical effort, copying errors, etc, —a limit, say, for 5 or 6 digits.

2. The number should have a variable length, similar to the Dewey Decimal System, to permit unlimited expansion for new items. On the other hand, we knew that the number should have a fixed length to permit use in a punched card stock control system.

3. All items, when sorted in numerical sequence by a punch card system, should group like items together to facilitate inventory control and the take-off of items for requisitions and purchase orders. In other words, all items carrying group discounts or those which should be considered for purchase at one time or from one source should be grouped together.

Other considerations indicated that the items, when sorted in the same manner, should arrange themselves in alphabetic order to facilitate look-up in the Stores records. That is, the system should arrange all items in alphabetic order so that any item could be located readily by name.

4. The system should be able to absorb new items readily without upsetting any established numbers or sequence of numbers. This, of course, is a major problem, and one which is usually a big factor in the breakdown of established systems having significant numbers.

5. A number once assigned should never be changed. However, we knew that this would be theoretically impossible considering the other limitations and felt that the best we could do would be to develop some system to keep changes to an absolute minimum.

6. The system should be designed to handle about 100,000 items, with expansion to perhaps 200,000.

A number of other factors are not included. These were of a more minor or local nature but also contributed their share of problems.

Our solution was a 10-digit all-numeric number. The number is composed of three groups of digits — three, four, and three, respectively —

System for Purchased Material

by P. J. CALLAN

separated by hyphens; for example XXX-XXXX-XXX. Letters are not used because they are more difficult to handle on punched card systems. The hyphens serve to break the number up into easily handled groups of digits.

Our experience with the two former systems indicated that six or seven digits was the minimum that could be used. Extending this to ten increased the flexibility several hundred fold and we knew by experience that we would need it. The extra time required to handle the longer number in writing requisitions and in keypunching and sorting punched cards is not as large a factor as it might appear. On the basis of 5000 transactions per day it only amounts to an estimated total of 8 man-hours per day. This is a small price to pay for the other features which the longer number provides. We find also, that it has not increased significantly the number of clerical errors.

The 10-digit number then provides a working compromise between the shortest number desirable for clerical purposes and the longest number that would be required for complete significance and flexibility.

In order to satisfy the requirements for inventory control, and to facilitate the grouping of related items on purchase requisitions and orders, etc, the number was tied in to a materials classification system.

All materials were divided into 100 basic classifications and the number assigned to any class became the first two digits of the number assigned to every individual item in that class.

Material Classification is Part of Item Identification Number

XXX-XXXX-XXX

"Class" of Material to which item belongs. Classes run from 00 to 99

All items can be classified into rather broad categories of materials arranged in a rather logical progression of kinds, beginning with Raw and Semi-processed materials, and following through Mechanical, Electrical, Chemical, and Miscellaneous finished items.

Summary of Materials Classification System

Classes	*Kinds of Items*
00 to 15	RAW AND SEMI-PROCESSED MATERIALS Hides, Coal, Lumber, Metals, Etc.
16 to 39	MECHANICAL PRODUCTS Hardware, Mill Supplies, Cutting Tools, Etc.
40 to 49	MECHANICAL EQUIPMENT Materials Handling, Power Transmission, Construction Equipment, Etc.
50 to 57	ELECTRICAL PRODUCTS AND EQUIPMENT Motors, Controls, Wiring, Electronics, Etc.
58 to 61	CHEMICAL AND PROCESSING EQUIPMENT Tanks, Pumps, Mixers, Packaging Machines, Etc.
62 to 79	CHEMICAL AND ALLIED PRODUCTS Chemicals, Plastics, Paints, Lubricants, Etc.
80 to 93	LABORATORY AND OFFICE EQUIPMENT Instruments, Laboratory Supplies, Office Equipment, Etc.
94 to 99	MISCELLANEOUS Protective Clothing, Safety Items, Etc.

Class numbers 00 to 15 were assigned to Raw and Semi-Processed Materials, which include such items as hides, coal, lumber, metals, etc; classes 16 to 39 to Mechanical Products, which include hardware, mill supplies, cutting tools, etc; and so on up to classes 94 to 99 for Miscellaneous, which include protective clothing, safety items, etc.

Below is part of the section covering Mechanical Products shown in more detail. Here again is a logical progression of kinds of mechanical items beginning with Hardware, and progressing through Mill Supplies, Hand Tools, Machine Tools, Cutting Tools, etc. Closely related items such as hardware and mill supplies are next to each other in the series; similarly, mill supplies and hand tools, hand tools and machine tools, etc.

Classification Details
Classes 16 to 39 — Mechanical Products

Class	*Items*
16	Hardware
17	Mill Supplies
18	Hand Tools
19	Machine Tools
20	Cutting Tools
21	Abrasive and Miscellaneous Tools
23	Bolts and Nuts
24	Screws

The classification is based primarily on considerations of the procurement problem; that is, on where the items are not likely to be found in the selling outlets. For example, we would

This paper was presented at the ASA Company Member Conference held during the Fourth National Standardization Conference at the Waldorf-Astoria, New York, October 20, 1953. Mr Callan is with the Material Standards Department, Eastman Kodak Company.

An efficient numbering system *for purchased materials is (only) one phase of modern materials management at Eastman Kodak. The recently completed warehouse below incorporates the latest developments in material handling.*

classify a small pulley as "hardware" if it were generally found to be listed in hardware catalogs and carried by jobbers who specialize in hardware items. On the other hand, if the pulley were of a type which was generally found only in catalogs covering materials-handling items and carried by distribution outlets which specialized in materials-handling equipment, we would classify it with the latter.

We have found a fortunate similarity between the classification of similar items by end use, by issuance from stock, by stockroom location requirements, by purchase requirements, and by availability in vendors' outlets. For example, the variety of items we call "Hardware," consisting of locks, latches, hinges, knobs, door closers, hooks, brackets, etc, are most likely to be listed on the same bill of material, installed by the same group of mechanics, and kept in one place in the stockroom for their convenience. It is also most likely that there will be certain vendors who specialize in selling these items, and that they should be considered at one time in placing orders for stock replenishment. Thus, to put them all in the same class solves many problems simultaneously.

Once an item is classified, however, the class number becomes the first two digits of the 10-digit item number. For example, every number assigned to a hardware item would begin with the digits 1-6.

Each class is further subdivided into 10 subclasses. For example, take Class 20 covering "Cutting Tools." This class can be conveniently subdivided into "kinds" of cutting tools, and the same factors and reasoning which apply to the classes themselves apply to the subclasses.

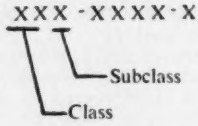
Subclassification Details
Class 20 — Cutting Tools

Subclass	*Kinds of Cutting Tools*
200	Drills, Reamers, Counterbores,
201	Milling Cutters, Gear Hobs, etc.
202	Single Paint Cutting Tools
203	Saws
204	Taps and Dies
205 to 209	(Unassigned)

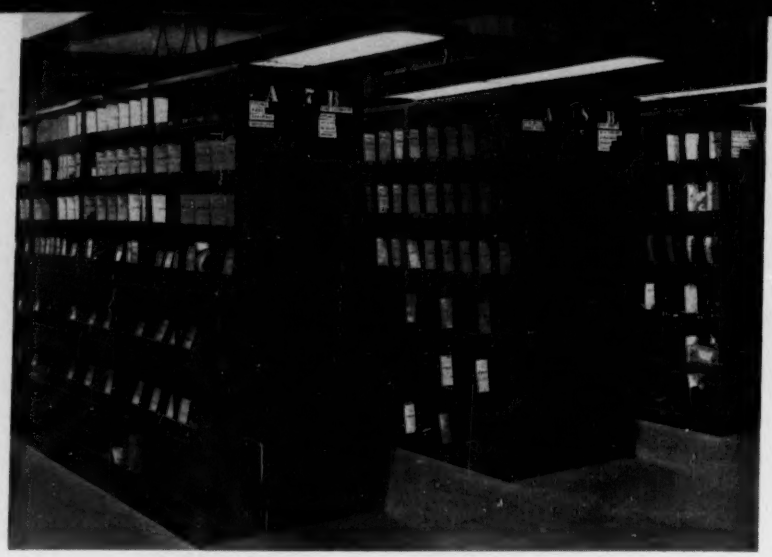
In subclass 200 for example, we have gathered together the drills, reamers, counterbores, etc, which, in general, are made by the same manufacturers, and are used in the same type of operations and on the same machines.

Saws, on the other hand, are made by other manufacturers and are used in other operations on other machines. These have been placed in another Subclass, 203.

"Class" and "Subclass" is Part of Item Identification Number



This third or subclass digit also becomes a part of the 10-digit item number. Up to this point, therefore, a numerical sort will automatically group all similar items together. This is as far as we go, however, to satisfy the requirements for classification. We have not found it feasible to carry the principle beyond this point for two reasons: First, it becomes too difficult to make decisions because differences become less well defined; and second, because it is too difficult to locate a given item in the records system. Beyond this point, therefore, we have favored the other initial requirement which calls for numbers to be assigned in such a manner that the items when sorted numerically, will arrange themselves in alphabetic order.



Standardized nomenclature, *with the system of numerical identification described in this paper, facilitate the issuance of stock and management of records at Eastman Kodak. All bins carry the standardized identification.*

Alphabetic Listing Within Subclass
Subclass 200 — Drills, Reamers, Etc

Kinds of Items	*Identification Numbers*
Augers	200 - *10* XX - XXX
Bits	200 - *20* XX - XXX
Counterbores	200 - *30* XX - XXX
Countersinks	200 - *40* XX - XXX
Drills	200 - *50* XX - XXX
Extractors	200 - *60* XX - XXX
Reamers	200 - *80* XX - XXX

Digits assigned to Kinds

Taking subclass 200 covering "Drills", Reamers, Counterbores, Etc again as an example, we have arranged all the "Kinds" of items alphabetically as shown: i.e. Augers, Bits, Counterbores, Countersinks, Drills, Extractors, and Reamers. This sequence can be maintained by assigning significant numbers to each such kind. These numbers are shown as 10, 20, 30, etc in the fourth and fifth digits. It is also obvious that we have used less than one-tenth of all the available numbers at this point and that we could absorb about 10 times as many new kinds before getting into difficulty, a condition not likely to be encountered in the foreseeable future.

Now, carrying this one step further, we can examine the various "types" of one of the kinds, say "Reamer". All the different types of reamers have been arranged alphabetically and numbers assigned in the

sixth and seventh digits as shown. Again we have a system which could absorb 10 times as many new types as we have listed.

Alphabetic Listing of Item Types
Subclass 200 (Continued) —
Reamers Only

Item Types	*Identification Number*
Reamer, *bridge, taper*	200 - 80 - *05* - XXX
Reamer, *chucking, fluted*	200 - 80 - *30* - XXX
Reamer, *chucking, rose*	200 - 80 - *35* - XXX
Reamer, *hand*	200 - 80 - *60* - XXX
Reamer, *hand, expansion*	200 - 80 - *62* - XXX
Reamer, *pin, taper, helical*	200 - 80 - *70* - XXX
Reamer, *pin, taper, straight*	200 - 80 - *75* - XXX
Reamer, *shell, spiral*	200 - 80 - *85* - XXX
Reamer, *shell, straight*	200 - 80 - *88* - XXX

Digits assigned to Types

"Size" is probably the next most important consideration. Each type of item can be arranged according to size by assigning appropriate numbers in the eighth and ninth digits.

Listing Items According to Size
Subclass 200 (Continued) —
Hand Reamers Only

Hand Reamer Sizes	*Identification Number*
Reamer, hand, 1/8	200 - 8060 - *10* X
Reamer, hand, 9/64	200 - 8060 - *12* X
Reamer, hand, 5/32	200 - 8060 - *14* X
Reamer, hand, 11/64	200 - 8060 - *16* X
Reamer, hand, 3/16	200 - 8060 - *18* X
Reamer, hand, 13/64	200 - 8060 - *20* X

Digits assigned to Minor Variables

Digits assigned to Sizes

This leaves the 10th digit free to assign to "minor variations," such as the type of steel — carbon or high speed—,special tolerances that might be required, or some new variant that might come up.

You may be wondering by this time how we could possibly fit all kinds of material into this same pattern. Actually we cannot, but it is not necessary to do so. We vary the pattern to fit the conditions.

Number Assignment Patterns
are Variable

Reamers	200-KKTT-SSM
Wire Cloth	172-KTTS-SSM
Steel Strip	011-TTTS-SSS
Machine Screws	25T-TSSS-MMM

Digits *K* are assigned to Kinds
Digits *T* are assigned to Types
Digits *S* are assigned to Sizes
Digits *M* are assigned to Minor Variables

This shows how this has been done in several specific instances. The first line shows a summary of the number assignment pattern which we have been following on Reamers. We have used the letter "K" to show the digits assigned to the various "Kinds," the letter "T" for the digits assigned to the various "Types" of the same kind, the letter "S" for the digits assigned to the various "Sizes" of the same type, and the letter "M" for the digit assigned to the "Minor Variables" for each size.

Before proceeding to the next line I would like to repeat the principle that the system should be expansible in the ratio of about 10 to 1 at any point; i.e. we should be able to add 10 times as many kinds, or add 10 times as many types, or add 10 times as many sizes, and even 10 times as many other variations. Thus, we can expand at any point without disturbing neighboring items to which numbers already may have been assigned.

Reviewing line one again, you will recall there were only seven kinds of items in subclass 200 which covered Reamers; i.e. Augers, Bits, Counterbores, Countersinks, Drills, Extractors, and Reamers. Therefore, although *one* digit could have taken care of them we assigned two digits, shown as "K" in the example above. Thus, we have made an allowance for an expansion up to 100, or somewhat over 10 times the original number. Again, a previous slide showed that there were only nine types of reamers, but we have allowed for the same 10 to 1 expansion by assigning two digits, shown as "T" in this example.

Now look at line two, which shows the pattern for another class of item: Wire Cloth was the only Kind in this subclass so we assigned only one digit (K) to handle it. This also provides a ratio of 10 to 1. We only had three or four types so we established two digits (T) for the types. Wire Cloth, however, comes in a very great number of sizes considering the combinations of mesh and wire diameters, so we assigned three digits (S) for size.

Steel strip, on the other hand, is so important that we have put it into a subclass, Oil, all by itself and there can be no other kind. There are a considerable number of alloys, however, and an almost unlimited number of possible size combinations. Consequently, we have assigned three digits to the alloys (types), and four digits to the sizes. No digits for minor variations are required because all such variations are taken into consideration in our company specifications which, incidentally, have been incorporated as significant numbers in the digits devoted to type.

The last line covers Machine Screws. These are so numerous that we devoted a whole class, 25, to them. Two digits cover the head types nicely and three digits cover the sizes. On the other hand we found so many variables of metals, alloys, finishes, thread fits, etc, that we allowed three digits (M) to handle them.

We maintain a Code Book in which the code pattern for each subclass is recorded. In many instances we also develop and record a size pattern which can be readily applied to new items as they come into the system. This is particularly helpful for such standardized items as metal shapes, screws, pipe fittings, cutting tools, grinding wheels, bearings, commutator brushes, incandescent lamps, etc.

The development of this code has not been simple. It has required a great deal of planning and research on each kind of item, and we have been hard pressed on many occasions to develop a satisfactory pattern that will meet our basic principles. We have had to develop a number of "gimmicks" but have always ended up with something workable.

On the other hand, the system is only expected to handle about 100,000 items and the theoretical numbers available in a 10-digit code are 10 billion; so, with proper planning, there should be enough to go around.

Need Standards for All Textiles, *Conference Says*

MINIMUM standards are needed to define the performance of all textile fabrics in terms of their end uses, a general industry conference decided at a meeting January 15.

The conference requested that the American Standards Association set up a project for this purpose. This request has been referred to the ASA Consumer Goods Standards Board for action at its meeting March 15.

The general conference was called following a request from the National Retail Dry Goods Association. NRDGA asked ASA to develop minimum end-use standards for all textiles following experience with the American Standard Minimum Requirements for Rayon and Acetate Fabrics, L22. In its request, NRDGA declared that the work should be similar to that done for L22 and should encompass end use standards for fabrics made from cotton, linen, silk, wool, and the various synthetic fibers other than acetate and rayon.

Irwin D. Wolf, general manager of the Kaufmann Department Store, Pittsburgh, and chairman of the NRDGA executive committee, presided. Others who discussed problems of the textile industry included: Ephraim Freedman, director, Bureau of Standards, R. H. Macy, New York; Robert L. Stutz, president, Better Fabrics Testing Bureau; Genevieve Smith, In Charge of Textile Laboratories, Sears, Roebuck & Company; J. Robert Bonnar, president, American Association of Textile Chemists and Colorists, and Technical Director, General Dyestuff Corporation; Dr Jules Labarthe, Senior Fellow, Mellon Institute; Charles W. Dorn, Director of Research and Testing Laboratories, J. C. Penney Company, and chairman, NRDGA Technical Committee.

What They Said About Textiles

(Excerpts from Talks at January 15 Conference)

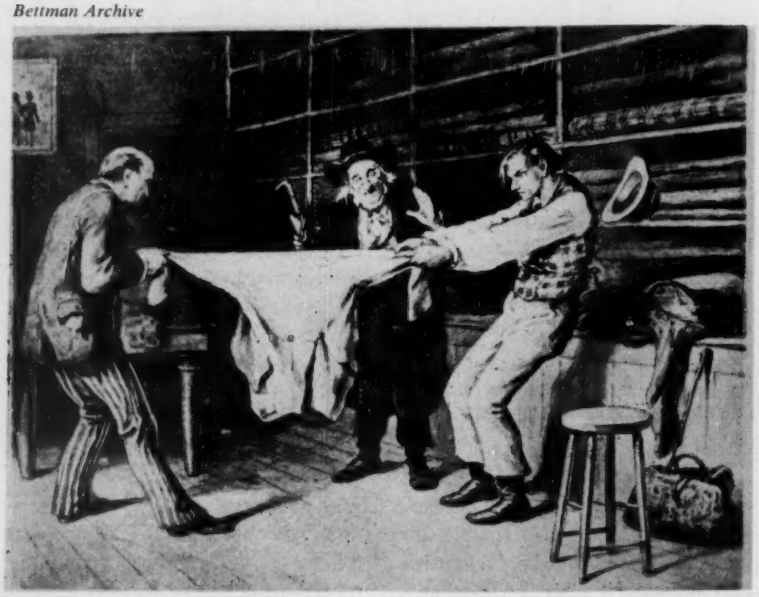
Irwin D. Wolf

We have too many names to recognize, too many claims to weigh, too many additives both in color and in finish which do not remain permanently in the fabric. It is high time, therefore, that end-use standards based on nationally recognized test methods be used as a basis for setting up the standard for a woman's dress regardless of the fiber of which it is made; for a child's play tog that will give dependable service, again regardless of the fiber; a man's sport shirt of known degree of colorfastness and dimensional stability; of draperies, of curtains, of slip covers that the customer can purchase with full knowledge that they will satisfy her particular needs whether the material be silk, rayon, acetate, Orlon, nylon, Dacron, wool, cotton, or anything else.

It is not our purpose to regiment textile production; as a matter of fact, outside these standards or these standard fabrics it is to the interest of all of us to have as wide a variety of colors, textures, finishes, and other variables as possible, for upon the development and improvement of these untried materials depend the variety and cersatility that make our textile market so exciting.

This unscientific test *for tensile strength may be one way to determine whether fabric meets end-use requirements; standard performance specifications and test methods are recommended for more satisfactory results.*

Bettman Archive



The strength of a thread *is being determined below, under standard conditions, and using a Scott tester.*

Modern Textiles

Ephraim Freedman

While visible evidence of widespread use of the Textile Standards L22 embracing acetates and rayons is not yet apparent, nevertheless an awareness of these standards is rapidly taking place among retailers and consumers. Also, retailers in increasing numbers are reported to be scanning offerings in terms of these standards, and to be rejecting merchandise which does not measure up to them.

Cotton curtains and dresses, which, because of finishes designed to impart permanent crispness, deteriorate rapidly as a result of chlorine retention, are still a problem.

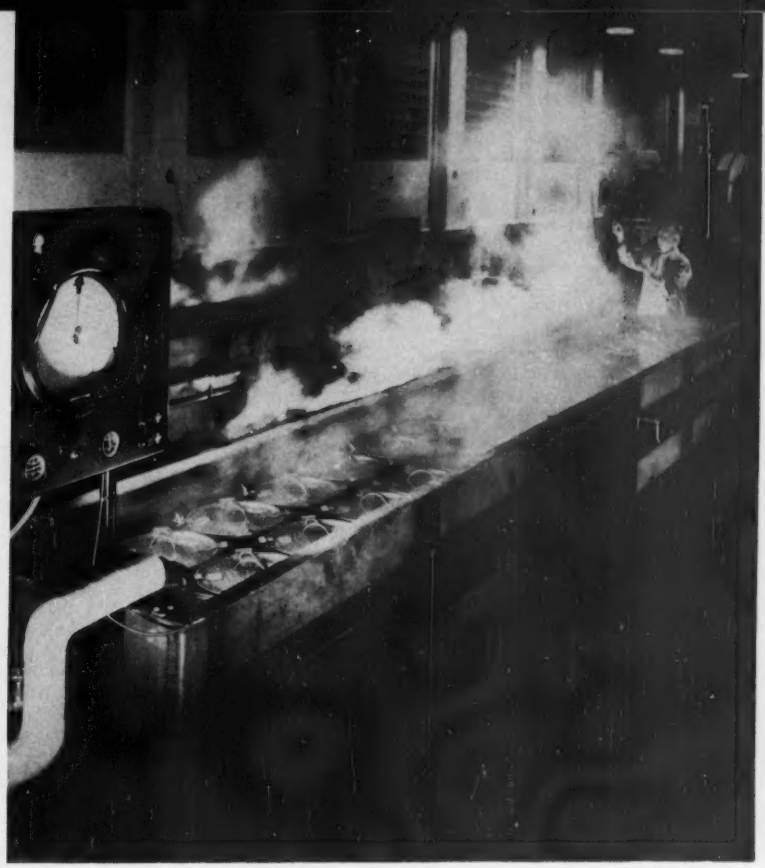
Linen tablecloths and napkins labeled "Colorfast" which bleed like "stuck pigs" when washed; men's silk suits and women's silk dresses, the fabric of which comes apart after a few wearings; the waterspotting of various finishes; the poor wear resistance of carpetings — these are but a few of many instances where end-use standards are needed. With end-use standards as a guide, mills, dyers, and finishers as well as retailers can be in a more salutary position to supply textiles and textile products that will not bounce back.

While the creation of American Standards would not, in my opinion, lessen the value of any honest brand labeling, mention on such labels that the product conforms to or exceeds the American Standard should increase consumer acceptance of that product.

Robert L. Stutz

There exist today literally hundreds of standard test methods which have been developed and approved by various technical associations. Most of these test methods have been incorporated into the research and quality control programs of the nation's leading textile organizations. Upon the reliability of these methods depend the reputations of the greatest names in textiles.

With the exception of a few fabric properties for which we admittedly do not have adequate test methods, I am certain that we can properly evaluate the serviceability of practically all fabrics.



Modern Textiles

Spool type dyeing kettle *in a knitting mill. Data provided by standard tests help dyers of textile fabrics select proper dye for textile's end use.*

The overwhelming majority of the consumer complaints analyzed at Better Fabrics over the past 25 years have proven this quite conclusively. The merchandise failed in consumer service primarily because it was not produced in accordance with the demands of its end-use.

The kind of minimum requirement standards we are contemplating represent the only practical basis on which the average buyer of textiles may purchase with any degree of assurance as to the serviceability of a fabric. By the simple expedient of specifying that the fabrics or garments being ordered must conform to a recognized standard, the garment manufacturer or retailer is relieved of the necessity of becoming concerned with the countless fabric properties which he is usually poorly equipped to evaluate.

The point which has caused perhaps the greatest concern, even to those who have been strong advocates of the standards, is the seemingly high cost of the testing which the use of these standards may require.

While it is true that the average laboratory test costs anywhere from three to fifteen dollars on a single sample basis, the economies of volume testing must be considered. When samples are handled on a volume basis, these same tests can be conducted at a fraction of their original cost.

As most of you know, our organization was privileged to serve as the official laboratory for the American Viscose Corporation's Crown Tested Program. During the years this program was in effect, thousands of samples were subjected to a wide range of serviceability tests. If the testing charges had been based upon the usual laboratory fees in effect at that time, the cost of this service would have been prohibitive. Because of the economies in volume testing, the actual cost to American Viscose came to less than two-tenths of a cent a yard.

Modern Textiles

Cotton cloth *being inspected during the production process.*

Since the introduction of all the new fibers and finishes, hardly a day has passed during which our laboratory hasn't received at least one request for the evaluation of a fabric against some practical end-use standard.

The adoption of recognized standards for fabrics of all fibers will provide with a floor of quality which will serve as a guide to the entire industry in the development and production of better textiles for years to come.

Genevieve Smith

Many years ago we purchased a dress of one fiber for a specific purpose; now there are dresses of various individual fibers or blends all designed for the same purpose For a specific use the customer expects the same serviceability from a dress of one fiber as from the other. If we had minimum end-use standards, she could come nearer getting equal serviceability from her garment no matter what its fiber content.

In large organizations, some type of specification buying is almost a must. End-use standards could aid the buyer, reduce some of the routine testing done by an individual company laboratory, and release the laboratory facilities for a development program.

J. Robert Bonnar

For satisfactory consumer acceptability, with respect to proper end-use requirements, many phases of the textile industry must be coordinated.

All the thinking and planning in the world on construction of the fabric, making it shrink-proof, waterproof, and styling it into the most beautiful combination of shade and cut of garment will mean nothing from the standpoint of ultimate satisfaction unless the proper dyestuff is applied.

Without the use of more defined terms than "this washes" or "this is fast to light" or "this stands chlorine," the dyer would have no measuring stick to ascertain whether one green dye which was labeled "excellent" or "very good" was better than another green dye which was labeled "fair." The first one labeled "very good" might have been washed at a much lower temperature than the one labeled "fair" and thus the comparisons would be of no value. Likewise, someone testing a dye might think that 20 hours was very good, whereas someone else testing another dye might call 20 hours "fair" and 60 hours "good."

The first step to correct this was taken by the AATCC when it started seting up standards for wash tests, light tests, chlorine tests, crocking tests, shrinking tests, and the like.

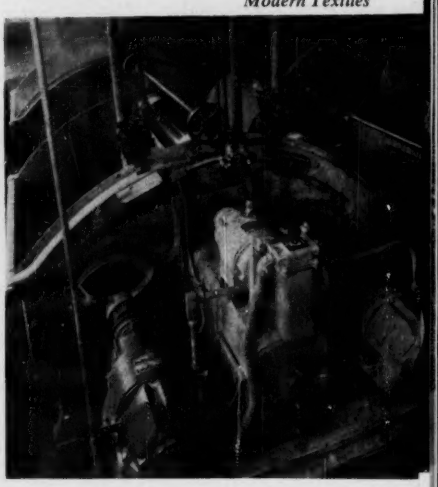
As new dyes come out, information is given to the dyer of textile fabrics — through circulars, brochures, and technical information — as to the properties of the dye with all of the evaluation made according to the standard AATCC tests. Thus it does not make any difference which dye manufacturer makes the color, which salesman sells it, or which dyer is involved, the same language is used by all.

Dr Jules Labarthe

A very large percentage of the consumer complaints would be avoided if the purchaser had been able to buy with full knowledge as to the performance of the fabric and of the various ingredients incorporated into making the garment, for, after all, the trimmings, the sewing thread, the binding, and all other parts of a garment should have as good performance in wear and in washing or dry cleaning as the base material of which the garment is made.

Motors propel *cloth through dyeing machines at constant speed, wind it at constant tension.*

Modern Textiles



In our 10,500 customer complaints, a quick resume by fiber shows the following:

	Percent
Acetate	22.5
Cotton	21.3
Wool	18.8
Rayon	18.8
Miscellaneous	13.0
Silk	4.5
Linen	1.1

The miscellaneous includes the other synthesized fibers as well as those which were not identified on our punch cards.

The most serious phase of consumer complaints is that we have no way of knowing exactly how many unhappy consumers are represented by each justified or borderline case. It is easy for a store to take care of the customer who brings something back if her complaint is a legitimate one and perhaps even if it is not, but we have a right to be worried about the other customers who bought the identical item.

We all have a stake in standards by which customers can buy goods of known quality and dependability.

Charles W. Dorn

Part of the impetus leading to this conference came from the Technical Committee of the NRDGA. This committee is made up of the heads of laboratories of retail establishments. As individuals, we are called upon by the buyers, merchandise managers, and other executives of our own store organizations to give technical advice in the purchase of merchandise and to help settlement of the more perplexing customer complaints. As a committee, we are called upon to give this same kind of advice to the directors of the NRDGA.

Any finish designed to glamorize or emphasize the shelf appearance or packaged appeal of a textile product should have reasonable permanency. The permanency of the finish — whatever its purpose — is an integral part of any textile standard that we would consider. Thus, finishes intended to make a cotton or a rayon fabric more resistant to wrinkling should possess the same quality even after many washings or dry cleanings.

Committee Completes Work on Neoprene-Type Wire, Cable

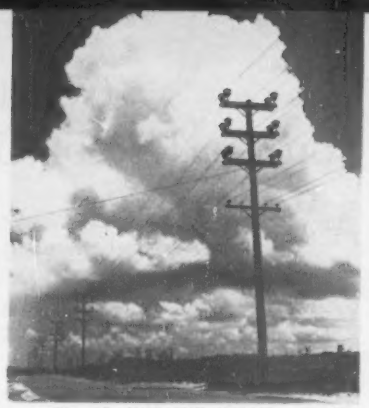


Photo by Richard B. Hoit from Cushing

For many years Technical Committee No. 12 on Weather-Resistant Wire and Cable of ASA Sectional Committee C8 has kept closely in touch with materials which might be applicable for overhead-line wire coverings. A number of years ago, a subcommittee was especially established to follow developments and trends with Polyvinyl Chloride, Polychloroprene (Neoprene), Polyethylene, and glass fibers, as these materials seem to hold the most interest and promise. Also, the committee was actively engaged in considering revisions for American Standard Specifications for URC Type Weatherproof, C8.18-1948, to incorporate fibrous glass yarn and other material and constructions.

The first result of this last few years' effort is the approval and publication of American Standard specifications for the neoprene-type weather-resistant wire and cable. It is expected that the others will be available in the coming year. Work in this connection is being actively followed.

Numerous visits to plants and laboratories and to material suppliers, and discussions with interested personnel of many organizations, together with meetings of both the Subcommittee and Technical Committee 12, have been necessary to develop specifications best suited to the overhead-line wire field. It has been recognized that the extremely long life desired on these coverings that are exposed to the weather calls for different requirements that would be applicable for the insulating or jacketing materials applied to many other electrical cable products. In some other products, the primary consideration is a very high grade insulating material; in others, as in jackets for portable cords and cables, the major consideration may be excellent mechanical performance under extreme working conditions.

Since these are relatively new materials which do not have many decades of application in overhead line wire to provide the opportunity to observe their response to weathering and deterioration, the Committee realized that the first drafts of specifications for them could only set down the best experience and judgment to date. As additional manufacturing and field experience is obtained with wire produced to these specifications, it is expected that there will be many additional suggestions as to how best to write specifications that will assure long life and adequate performance.

These newly issued specifications represent the first step toward a much needed standardization of the covering compounds and the physical dimensions of this type of wire and cable. "These specifications will be extremely useful," declares C. T. Sinclair, Duquesne Light Company, Chairman of Technical Committee 12. "They have been much needed to bring about some reasonable degree of standardization so that field experience will be obtained on relatively similar constructions. This will facilitate future revisions based on such field experience and work toward a fully satisfactory specification."

"Much credit is due to the many collaborating organizations and individuals, both those represented on the committee and those who have kindly served as consultants and advisors," Mr Sinclair said. "It is hoped that these specifications will come into general use very promptly."

Court Rules on the Use of Certification Mark

A U.S. District Court in San Francisco has recently handed down a decision protecting a valid certification mark against misuse.

The mark is the Seal of Approval of the American Gas Association. AGA authorizes use of the Seal on gas-burning appliances that have been tested in the AGA Laboratories at Cleveland or Los Angeles and found to comply with the requirements of American Standards. These standards are developed by ASA Sectional Committee Z21 sponsored by the American Gas Association. Included in the committee's membership, in addition to AGA representatives of appliance manufacturers and operating companies, are such national organizations as the National Board of Fire Underwriters, the U.S. Public Health Service, the Liquefied Petroleum Gas Association, the American Home Economics Association, the National Bureau of Standards, the American Institute of Architects, and others.

The AGA Seal certifies, therefore, that appliances on which it appears have passed rigid tests and conform to national standards of safety, durability, and performance.

The court decree resulted from a suit under the Lanham Act started by the American Gas Association in September 1953 and which was among the first proceedings brought under the certification trade-mark provisions of that Act. It enjoins the defendants — certain gas water heater manufacturers and distributors —from unauthorized use of the AGA Seal.

The defendants were found by the court to have "repeatedly used, affixed, or displayed the certification trade-mark (of the American Gas Association) upon gas water heaters manufactured, produced, assembled, or distributed by said defendants, which gas water heaters have not been tested or approved by the plaintiff."

The court also, found, among other things, that the defendants had made or sold untested and unapproved water heaters "which did not comply with the safety standards and requirements of the plaintiff and which were unsafe, inefficient and unfit for use by the ultimate consumers or users of said gas appliances."

As a result of this action, the defendants were ordered among other things to cease unauthorized use of the AGA certification trade-mark or any imitation or reproduction thereof, on any water heaters or other gas appliances made or sold by them, and within a specified period to notify all recipients of heaters illegally bearing the seal that these heaters had not been approved by AGA, do not meet its standards or requirements, and are not authorized to bear the seal of the Association.

More than 95 percent of all gas appliances sold each year carry the AGA Seal of Approval. Such appliances must conform in every detail to models that have been rigorously tested at the AGA Laboratories at Cleveland or Los Angeles. These tests are based upon national requirements approved by the American Standards Association. There are as many as 500 tests provided for some appliances, in order to determine that they meet the rigid requirements for safety, durable construction, and satisfactory performance established by the applicable American Standards.

Adherence to Standards Urged

In a seminar on standardization at the Gentile Air Force Base, Dayton, late last year, Edmund P. Koenig, Standards Liaison Engineer, Armed Services Electro - Standards Agency, evaluated the results obtained in implementing the Standardization and Qualified Products Lists program.

Mr Koenig urged that solicitation of bids for components be limited to companies on the Qualified Products lists when qualification approval is a requirement. Use of non-qualified sources needlessly burdens the Government laboratories, which must test the components received for compliance with specifications, he said. This repetitive testing creates "hidden costs" and sometimes prevents adherence to required delivery schedules.

He also warned against the indiscriminate granting of waivers in order to permit acceptance of nonstandard parts. In a display of three resistors, each marked with an identical MIL (JAN) type designation, he pointed to the fact that the nonstandard resistors were physically larger and their protective coating appeared to be inferior. "No doubt," he said, "these nonstandard resistors will operate in the one equipment and a waiver was granted; but do these resistors meet all test requirements of the specification?"

"Due to this arbitrary action . . . thousands of non-specification resistors entered the supply field," Mr Koenig said.

"Inspectors should not accept equipments containing nonstandard components without positive written proof of unavailability of MIL (JAN) approved components by a high echelon engineering authority."

It is of utmost importance that all engineering, technical procurement, and supply personnel be thoroughly familiar with the specifications. Quite a number of types included in the Parts or Maintenance Lists are no longer listed in new or revised specifications, and in many cases, characteristics, tolerances, resistance values, etc, have been deleted or value ranges have been extended, he said.

Recent Rulings on Unusual Accidents

The following interpretations have been handed down by the Committee of Judges of ASA Sectional Committee Z16 on accident statistics. They serve as a guide to companies who want to know how to count injuries due to unusual accidents in their safety record.

Safety engineers are invited to obtain interpretations of the American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, by sending the facts on doubtful cases.

Reprints of all the published decisions can be obtained from ASA.

•

Case 225

Two supervisory personnel were fatally injured in an automobile accident while returning to their established place of employment, after they had been home for dinner.

The men were travelling along a four-lane highway in a car owned by one of them. As they neared an intersection, an on-coming car made a quick left turn directly in front of them. To avoid striking this car, they swerved to the left into the on-coming lane and were struck head-on by a bus. Witnesses testified that there was no negligence on the part of the deceased driver.

The two men were two of six employees who had been designated to serve as conference leaders for a series of supervisory conferences. A special course of instruction for these conference leaders was given. The conference leaders have been in the practice of meeting from time to time to go over the conference material and keep it fresh in mind. Such meetings were generally held immediately following the normal hours of work.

On the night in question it had been planned by the group that they would meet at the plant in the Conference Room after dinner, with the meeting time having been set at 6:30. There was no rigid schedule established or adhered to in the matter of these informal meetings, the entire arrangements being agreed upon each time in advance by the conference leaders concerned. Attendance at such meetings was not prescribed by Management and was not compulsory for any of the conference leaders involved; the entire arrangement was a wholly voluntary one devised by the group for their own benefit and assistance.

The two men were coming from home to the plant to join the group of conference leaders when the accident happened. The car was owned and driven by one of the deceased. The exact time of the accident has not been fixed but is believed to have been between 6:30 and 7 P.M.

The two men were en route to the plant for the purpose of participating in a conference with respect to company affairs. While these conferences were planned by the group for their own benefit and assistance, the project was company sponsored and they were responsible individuals who were trying to carry out duties imposed upon them by reason of their company assignment.

However, they were carrying out these implied duties outside of regular working hours and the trip from their home to the plant was being made in a vehicle belonging exclusively to the deceased driver rather than to the company. In other words, they were engaged in going from their respective homes to the plant to participate there in functions having a connection with their employment. The question arises whether such a trip to the plant and injuries which arise in the course of such a trip are in the course of the employment.

The committee decided that these injuries should not be included in the rates on the basis that paragraph 2.2.1 of the standard does not include injuries experienced in the course of regular travel between employee's home and the entrance to company property even though such travel may be at an unusual hour.

•

Case 226

A home economist conducted the last home service call she would normally have made at 3:30 P.M. At that time she was travelling out of headquarters in a company-owned automobile. Instead of returning to her headquarters, which she could have normally reached well before 5:00 P.M., quitting time, she elected to visit some friends. She travelled 26 miles further from headquarters unauthorized and without informing her supervisor of her intentions. She had dinner with her friends, left them after nightfall, drove 60 miles back to headquarters, and had an automobile accident before she reached her home. She was injured and unable to return to work the next day.

This accident occurred between the point where she made the service call and her home. Had she returned to headquarters after making the call as she should, she would have completed her day's work at headquarters and would not have been en route home in the company-owned car. Had she not had this accident she would have gone home and reported for work the next day without apprising anyone of the fact that she had elected to travel fifty-odd miles more than was authorized and had continued to expose herself to an accident after nightfall. The accident occurred about 9:00 P.M. and she is not considered as being eligible for any pay beyond a normal day's work, which closed at 5:00 P.M. The company wanted to know if this injury should be included in the rates.

The committee decided that this injury should not be included in the rates on the basis that this employee took herself out of the course of employment when she used the company automobile after regular hours for a private engagement. The committee also called attention to the ruling in Case No. 190.

•

Case 227

"We have had a question arise concerning the proper interpretation of paragraph 2.1.5.2," wrote one company.

"To quote the paragraph in question — 'A worker called away from his house for special emergency duties, but not required to live away from home, is in the course of employment from the time he leaves his home until he returns.'

"A strict interpretation of this paragraph would indicate that any time one of our maintenance men is called to the plant in the night as a result of a plant breakdown or emergency, his industrial exposure would include all time spent in coming to the plant and returning home after the job is completed. We question whether this is the reasoning behind the paragraph since hazards on the highway would seem to be separate from industrial exposure whether the employee is coming to work on his regular shift or as a result of an overtime call.

"We do not have any specific accident in mind in raising this question, but our Maintenance Department head has asked for an interpretation of the paragraph. We would appreciate your thoughts on the point in question.

"Maintenance employees are, of course, not the only ones who might be affected. If a man is taken ill during his shift, a replacement would be called in possibly to report two or three hours earlier than his regular reporting time. As an example, a midnight man might be asked to report at 10:00 P.M. Would the fact that he is reporting two hours earlier as a result of a plant emergency mean that a highway accident on the way to work should be included in his industrial record?"

The committee did not make a definite decision on this case because it was a hypothetical case. Some of the members commented that paragraph 2.1.5.2 was subsidiary to and merely an amplification of paragraph 2.1.5. The major section 2.1.5 referred to employees who have no "regularly established place of employment." The members, therefore, believed that 2.1.5.2 also should apply only to employees who have no regularly established place of employment, and they did not believe that this would apply to employees who are regularly working in a manufacturing plant.

•

Case 228

A company wrote:

"An employee was stepping up from the deck to the cab of his Diesel Locomotive Crane, a distance of 24 inches. He placed his right foot in the doorway of the cab, and with his hands on the grab irons on each side of the cab door, he pulled himself up to the cab. As he did this, his right knee cracked. His knee did not strike against anything nor did he twist it. This employee has had close to 14 years ex-

perience on this job and has climbed in and out of his cab on an average of 10 times a day every working day for each of those years. Thus there was no aggravation of a pre-existing weakness.

"The basic concept of the American Standard Method of Compiling Industrial Injury Rates is keynoted in the Introduction — (1) to provide a practical and uniform basis for recording and measuring industrial injury experience, and (2) to evaluate 'relative need for accident-prevention activities,' 'seriousness of the accident problem,' 'effectiveness of safety activities,' and 'the progress made in accident prevention.' Records then must be based on those matters upon which industry has some control. Obviously, there must be both an accident and an injury to come within the scope of the code. An accident cannot be inferred merely from an injury. There must be proof that the injury resulted from an accident and not an event. Any other school of thought would imply that damage to the physical structure of the body is in itself an industrial accident.

"The case cited herein is a striking example of an injury which arose out of an event but there was no accident."

The committee called attention to the Introduction of the code wherein it states that the code provides a practical and uniform basis for recording and measuring industrial injury experience. Since this case meets the requirements of an industrial injury in that it arose out of and in the course of employment and resulted in lost time, it should be included in the injury rates.

•

Case 229

A member of the Mechanical Department reported to his foreman on Tuesday that his right side was hurting. He seemed to think that he might have a muscle strain or rupture.

He remembered that on the previous Thursday his crew was handling some nine-inch cast iron pipe and while holding up one end he stumbled over another piece of pipe, causing most of the weight of the pipe to fall on him. At this time, however, he stated that he did not feel any sudden or sharp pain. He continued working without interruption and finished his shift.

Later that night he stated his side started hurting a little. The pain seemed high on his side and he thought he had a severe side ache or maybe appendicitis. He reported for work the next day and worked all that day. The pain stayed with him through the weekend and the following Monday, on which he worked. Medical examination revealed a small inguinal hernia and an operation was advised.

The committee decided that this injury should not be included in the rates on the basis that it did not meet condition (c) of paragraph 2.2 of the standard.

•

Case 230

A middle-aged female bench assembler reported for work at seven A.M. At approximately eight A.M. the supervisor requested the employee and a group of other employees for whom he was responsible to report to the conference room for a five to ten minute discussion. Both the plant and the conference room are air conditioned. Inasmuch as the conference was to be a short one, the employees did not bother to sit down in chairs that were available, but stood throughout the conference. The conference had been in progress five minutes when the subject employee fainted and fell face downward on the asphalt tile floor and struck the left side of her forehead and face. Injuries thus sustained kept her away from work for four days.

Although the employee gives no history of fainting, she stated upon returning to work that she had been ill. Neither she nor her foreman felt that the discussion in the conference room had anything to do with the incident, inasmuch as the discussion was not in any way critical of performance, but was simply a routine outline concerned with production changes.

The committee decided that this should not be considered an industrial injury and should not be included in the rates. The committee concluded that although this fainting spell occurred during the hours of work, it did not in any way arise out of employment.

•

Case 231

On May 11, an employee at a steel plant was struck on the head by a crane block which had been lowered at moderate speed. The employee was wearing a "hard hat." The employee states that as a result of the blow his "knees buckled," but he was not caused to fall. He was not unconscious at any time and his hard hat was not damaged in any way. He was immediately referred to the plant dispensary where on examination it was found that there were no physical signs of injury. There were no bruises or cuts on the head; back and neck were negative. After a short period, and following his request, he was returned to a light job for the remainder of this shift. He continued working for several days until, on May 15, he reported to the dispensary complaining of pains in his neck and head. He was thereupon given a quantity of aspirin with instructions as to when and how to take it. He left the dispensary and returned to work. However, it would appear that he had not only obtained an additional quantity of aspirin from other sources, but completely ignored the instructions given to him and consumed in excess of 100 aspirin tablets of five grains each in the following period of 24 hours.

As a result thereof, he was hospitalized on May 16, and released as much improved on May 21. His case had been diagnosed as salicylate poisoning. On May 26, he was again seen by the plant physician. As a result of the physician's observations and findings, he was the same day referred to a psychiatrist who advised that the employee was suffering from dementia praecox and, in fact, was in a manic state. Thereupon, he was immediately hospitalized and given treatment.

He was released from the hospital within the following week and continues under treatment. He is responding very well to treatment and it is expected that he will be sufficiently well to return to work in the near future. It is the opinion of the doctor that the dementia praecox long predated the accident of May 11, and that his condition was progressively worse before the accident. His family history shows that his father died in the State Hospital for the Insane. The history procured from the employee's family shows clearly that for a long period of years, manifestations of dementia praecox have been evident to the immediate family. However, no such manifestations were observed at work.

It is the opinion of the psychiatrist that the manic state found on May 26 would have occurred inevitably in the ordinary course of events at some date in the future. It is possible that regardless of intervening events the situation on May 26 was the result of the ordinary progression of the functional disability. However, he also states that while he is of the opinion that the dementia praecox is not the result of the injury of May 11, he is nevertheless unable to disassociate the precipitation of the manic state found on May 26 from the accident. In other words, while the condition on May 26 may have been coincidental, nevertheless, the psychiatrist states that it cannot be said that the injury did not hasten the ultimate development.

In view of Section 3.6.1 of American Standard Z16.1-1945, the company asks,

1. Is the hospitalization of May 16 to May 21 to be classified as a disabling injury?
2. Regardless of the answer to question 1, is the hospitalization and time lost from work subsequent to May 26 to be classified as a disabling injury within the meaning of Section 3.4?

The committee decided that this case should be included in the industrial injury rates as a temporary total disability. The members commented that time was lost in the first instance by this employee because of improper medication. Although this may have been outside the control of the First Aid Department, the committee has consistently ruled that such cases are reportable. In the second loss of time, the doctor treating the case had been unable to state that the cause of the lost time was disassociated from the accident of May 11. The members called attention to paragraph 2.3 which states that any injury aggravating a pre-existing condition or weakness shall be classified according to the ultimate total disability of the injury.

New Concept of Building Code Drafting and Administration

by Samuel P. Kaidanovsky

The Problem of Building Regulations

Inadequate building codes of a specification type prevail in many municipalities. These codes fail to permit the use of recently developed new and better building materials, equipment, devices, and construction techniques at savings without sacrificing the safety of the occupants of the buildings.

Certain state legislatures have been concerned with the complex problem of building regulations for a long time, and a few of them have drafted statutes of limited application. But the Legislature of the State of New York was the first to undertake a comprehensive study of municipal building code problems by the creation of a special committee for this purpose.

Joint Legislative Committee on Statewide Building Codes

A Joint Legislative Committee on Statewide Building Codes was created by concurrent resolution of the New York State Legislature in March, 1946. By subsequent resolutions the Committee was continued until March, 1949.

Committee Assignment. — The Committee was instructed by the Legislature to study the effect of building construction code provisions upon the cost of buildings; to coordinate interrelated state and municipal laws and regulations pertaining to the construction of buildings; and to recommend legislation relative to uniform minimum standards for building construction applicable to all communities of the State of New York.

Brigadier General Edward J. McGrew, Jr
Chairman N. Y. State Bldg Code Commission
Volpe Studios

Committee Report. — After three years of investigation the Joint Legislative Committee on Statewide Building Codes reported to the New York State Legislature in 1949 that (*a*) in view of rapid advances in the building industry, many local building codes are antiquated; (*b*) the codes are inflexible, amendments are cumbersome and can be made only by a slow process of local legislative action; (*c*) code inflexibility prevents the use of newly developed materials and construction methods; (*d*) the use of standards higher than the minimum standards required for safety impose a cost burden which bears no reasonable relation to the degree of safety achieved; (*e*) uniformity of standards in local codes is wholly lacking; (*f*) the lack of standardization in test data, and in requirements for performance of materials and equipment, which may be acceptable in one municipality and unacceptable in another, inflicts an unnecessary burden on manufacturers and distributors; and (*g*) the lack of standardization results in higher costs.

What Is the Remedy? — The remedy recommended by the Committee was in the form of a State Building Code Law, which provides basic and uniform *performance-type standards;* reasonable safety standards; and encouragement of the use of modern materials, equipment and methods of construction, thus lowering construction costs. Such a State Building Code Law was passed by the New York State Legislature and signed by Governor Dewey on April 21, 1949. This was a milestone in the development of building code laws.

New York State Building Code Law

The New York State Building Code Law (Article 18, executive law State of New York, 1949) became effective on May 1, 1949.

State Building Code Commission. The Law provides for the establishment of a State Building Code Commission in the executive department consisting of five members appointed by the Governor by and with the advice of the Senate. The present membership of the Commission is as follows:

> Chairman, Edward J. McGrew Jr., New York City; Vice Chairman, George Bain Cummings, Binghampton; Commissioners — Walker S. Lee, Rochester; Ralph A. Lehr, Buffalo; William Lescaze, New York City; Technical Director of the Commission, Arthur J. Benline.

Powers and Duties of the Comission. — The Commission is authorized and empowered to formulate, propose and adopt rules and regulations relating to the construction, reconstruction, alteration, conversion, and repair of buildings; including installation therein of plumbing, heating, electrical, ventilating, conditioning equipment, elevators, dumbwaiters, escalators, and other mechanical additions and installations. The Commission is authorized to "prescribe standards or requirements for materials to be used in connection therewith, including provisions for

---

Mr Kaidanovsky, Consulting Engineer, is former Chairman, Federal Interdepartmental Standards Council; technical consultant, Federal Specifications Board; and editor STANDARDS WORLD.

safety and sanitary conditions." The Commission is also authorized "To adopt tests and approvals or to authorize or provide for the testing and approval of materials, devices and methods of construction to ascertain their acceptability under the requirements of the State Building Construction Code. To appoint experts, consultants, technical advisors and advisory committees for assistance and recommendations relative to the formulation and adoption of the State Building Construction Code."

Standards for the Design of a State Code Prescribed by Executive Law. — The Law established the following standards for design of the Code:

"1. To provide reasonably uniform standards and requirements for construction and construction materials consonant with accepted standards of engineering and fire-prevention practices.

"2. To formulate such standards and requirements, so far as may be practicable, in terms of *performance objectives*, so as to make adequate performance for the use intended the test of acceptability.

"3. To permit, to the fullest extent feasible, use of modern technical methods, devices and improvements which tend to reduce the cost of construction without substantially affecting reasonable requirements for the health, safety and security of the occupants or users of buildings.

"4. To encourage, so far as may be practicable, the standardization of construction practices, methods, equipment, material and techniques.

"5. To eliminate restrictive, obsolete, conflicting and unnecessary building regulations and requirements which tend to increase unnecessarily construction costs or retard unnecessarily the use of new materials, or to provide unwarranted preferential treatment to types or classes of materials or products or methods of construction."

Commission's Survey Shows Local Building Code Deficiencies

A survey conducted by the Building Code Commission early in 1950 shows that at least 34 communities in the State of New York have building codes, ordinances, or regulations in force, but most of them are not being kept up to date. Eighty-nine of the 334 local laws, or more than 25 percent, are out of print, or are unavailable in convenient form and therefore were not included in the study.

Of the 245 codes studied only 66, or approximately 25 percent, have been revised since their original adoption. Of the 58 that have been in force for more than 20 years, only 14 have been revised.

A detailed examination and a comparative analysis of local laws revealed one to four of the following deficiencies in most of them:

(1) Out-of-date provisions from failure of municipalities to revise regulations to keep abreast of technological developments in the building industry.

(2) Incompleteness, especially with respect to regulations on plumbing, fire-proofing, fire-stopping, and provisions for wind and snow loads.

(3) Inflexibility, arising from rigid specification-type provisions, making amendments cumbersome.

(4) Disparity in existing requirements, brought about by disregarding basic standards for structural strength and fire resistance accepted by the architectural and engineering profession.

The results of the survey disclosed the chaotic condition of existing local building codes and especially the difficulty encountered in administering the specification-type codes in general use in about 350 municipalities in the State of New York and in approximately 2,000 municipalities in other states.

Major Departures in Code Framing

Performance-type Code vs Specification-type Code. To carry out the provisions of the State Building Code Law, the Commission has formulated a code in terms of "performance objectives." This type of code is technically known as a Performance Code.

The principle of "performance objectives" which has guided the Commission in its code drafting requires that the provisions of the Code be stated in such a way as to clearly define the objectives aimed at — the listing of approved materials, devices, and methods of construction based on performance as related to structural strength, fire resistance, and service equipment for lighting, heating, conditioning, ventilation, and sanitation. This is to be accomplished without freezing into law specific methods or means to attain the desired results. It is the "open door" feature of the performance-type code which has made it acceptable to code authorities. According to the Commission, "The basic rationale of performance codes anticipates advances in the art of building, and little if any change in the legal requirements of the codes." In other words, the codes are to be more or less fixed, and the regulations thereunder so framed as to apply to changes in improved methods and materials as these are developed in the future.

Amendment by the Commission vs Amendment by Legislature. In passing the State Building Code Law, the Legislature vested extraordinary powers in the Building Commission relating to details of the Building Construction Code and its amendment. To quote the law exactly, "Because it is essential that any such code be readily adaptable to changing conditions, detailed enactment of all the provisions of such a code by legislature is impracticable." A code when enacted by a legislature requires legislative action to amend it, which is a slow and cumbersome process. The State Building Construction Code promulgated by the Commission will at no time require revision by the legislature. The power of the Commission to promulgate the Code and by amendments constantly to revise it to keep abreast with technical progress in the building industry is of great importance. This is further simplified by the adoption of a performance-type code.

New Concept of Code Drafting Put into Effect

The use of a performance-type code rather than a specification-type

Arthur J. Benline,
The Commission's Technical Director

code, and amendment of the code by the Commission instead of by the Legislature represent two major departures in code drafting — the first, of a technical concept, and the second, of a legal concept. These concepts have been recognized for a long time by code framers, but have never been given the force of law. It remained for the Legislature of the State of New York to recognize the practicability of these concepts and to incorporate them in the State Building Code Law. These major departures were blended by the Commission into a harmonious design of efficient code administration and enforcement.

State Building Construction Code Applicable to One- and Two-Family Dwellings

The Commission has issued its building *requirements* applicable to one- and two-family dwellings in the form of a Code, which is the *law*, supplemented the Code with a technical manual of acceptable *standards*. The Code, which became effective on November 1, 1951, is subdivided into five major parts: General provisions; space requirements; structural requirements; fire-safety requirements; and equipment requirements.

Code Manual for the State Building Construction Code

The first issue of the Code Manual, dated November 1, 1951, is a *guide* prepared for building officials, architects, engineers, builders, owners, and others to assist them in the interpretation, application, and enforcement of the State Building Construction Code. The Manual sets up acceptable standards for construction of one- and two- family dwellings. The text of the Code is included in the Manual. The Manual is subdivided into five major parts corresponding to the five major parts of the Code. Sections of the Manual are correlated with the sections of the Code by a numbering system which permits the designer, builder, or building official to find quickly applicable and acceptable *standards* of materials and construction methods meeting the *performance requirements* of the Code. The standards set forth in the Code are to be interpreted as a condition of acceptance rather than mandatory standards excluding other methods of compliance. The Manual references 105 standards developed by 20 authoritative standardization agencies.

The preparation of this Manual in conjunction with the new concept of a performance code is a pioneering and logical step in the furtherance of modern building regulations.

The Manual, 300 pages, 8½ x 11 inches, more than 100 full page illustrations, can be obtained at $2.00 a copy, postage paid; checks and money orders to be made payable to the order of the State Building Code Commission and mailed to the Commission's office at 1740 Broadway, New York 19, N. Y.

Home Rule Principle of the Code

Any municipality may accept the State Code by a simple resolution, and if dissatisfied may withdraw from its application after one year. The local building official administers and enforces the State Code in the same manner as the local code. Any local legislative body of any municipality may recommend the adoption of higher standards of construction in such municipality. On the other hand, no municipality in which the State Code is in force has the power to supersede the rules and regulations promulgated by the Commission.

Safeguards Against Local Administrative and Enforcement Abuses

As stated above, the Commission has no power to administer or enforce the provisions of the State Code adopted by municipalities, but the law protects those building under the Code from arbitrary interpretation and enforcement by local building officials, by setting up a Board of Review to which any aggrieved person may apply. Upon promulgation of the State Building Construction Code, the Commission designated three of its officers to act as a State Board of Review.

Product Acceptance Procedure

The Commission has established a detailed procedure for acceptance of materials, equipment and methods of construction.

Supporting data. The applicant is required to indicate specifically under what section of the Code, and to what specific purposes he proposes to apply the product or method; to submit a detailed description of the product or method together with test data prepared by laboratories or agencies acceptable to the Commission.

Filing Fee and Test Charges. In addition to an application fee to cover preliminary technical processing, the applicant is required to bear the cost of any tests that the Commission directs be made.

Certificate of Acceptance. If the product or method meets the functional requirements of the Code, a certificate of acceptance is issued to the applicant with qualifications of acceptability indicated in the certificate, together with conditions of use.

State Building Construction Code Applicable to Multiple Dwellings

Upon promulgation, on December 15, 1953, of the State Building Construction Code Applicable to Multiple Dwellings, a complete and up-to-date set of regulations covering all types of residential construction became available to all municipalities of the state. These new regulations complement those applicable to one- and two-family dwellings promulgated by the State Building Commission on November 1, 1951, and discussed in detail in the preceding pages. The procedure for the development of the Code for multiple dwellings follows the pattern established by the Commission with the first regulations applicable to one- and two-family dwellings.

New Code Manual for All Types of Residential Buildings

A draft of a new Code Manual covering all kinds of residential buildings has recently been prepared by the technical division and submitted to the Commission. This Manual will complement the one issued on November 1, 1951, devoted to the construction of one- and two-family dwellings described above. The edi-

tion will cover all types of residential buildings. It is expected that the Manual will be published sometime early in the spring.

Commission's Service to Municipalities

The Commission performs the following services to municipalities:

1. Provides a modern construction code without cost, thus saving the taxpayers money for code preparation and amendment.
2. Provides a Code Manual, the only one of its kind in existence, and keeps it up to date.
3. Provides a technical service and research facilities through a staff of trained architects, engineers, and other specialists.
4. Acts as a clearinghouse for test data prepared expressly for the Commission or furnished by accredited laboratories and authoritative organizations.
5. Provides uniform procedures for introduction of new standards developed by standardization agencies.

Profits from Streamlined Code Drafting and Administration

The Commission's work has a beneficial effect on real property value through protection afforded by good building regulations; it results in lower fire insurance, lower rates of property value depreciation; and is profitable to the building industry through savings accruing from the use of improved materials and advanced techniques of construction.

Answer to Building Problems in Other States

The most revolutionary development in building code draftsmanship has been the performance-type code which encourages ingenuity in design, and is furthering the standardization of building materials and test methods.

The unique technical, administrative, and enforcement features of the Code seem to be the answer to building problems facing the municipalities of other states. It is hoped that the pioneering work of the State of New York will serve as a model in the preparation of building codes in other states.

In the words of George Washington, "Let us raise a standard to which the wise and honest can repair."

Hepenstal Appointed

Roger F. Hepenstal, New York business executive, has been named Director of Cataloging, Standardization, and Inspection in the Office of the Assistant Secretary of Defense (Supply and Logistics).

Mr Hepenstal will be concerned primarily with policies and programs governing cataloging, standardization, and procurement inspection activities in the Department of Defense, including assignment of responsibilities in these areas to the military departments.

He will be charged with establishment and implementation of a single supply cataloging system throughout the Department of Defense. He will also be responsible for development of single specifications for items used throughout the Department of Defense and for reducing the number of sizes, kinds, or types of generally similar items.

Mr Hepenstal's directorate will also concentrate on elimination of duplication in procurement inspection and on employment of inspection procedures.

Following graduation from the Stevens Institute of Technology in 1925, Mr Hepenstal joined the American Can Company. He was elected Vice President in charge of Manufacturing Operations in 1951. He is now on leave of absence from The American Can Company.

Data on Construction and Building Materials

The Department of Defense Section of the Federal Supply Catalog on Construction and Building Materials has been issued. It consists of the following: Group 56, Part 1, Introduction, Table of Abbreviations and Alphabetical Index of Names.

Group 56, Part II, Classes 5610, 5620, 5630, 5640, 5650, 5660, 5670, and 5680.

Federal Stock Number Index and Alphabetical List of Items of Supply Within Classes:

Class 5610. Mineral Construction Materials, Bulk
(Includes: Asphalt; Cinder; Gravel; Lime; Sand; Rough Dimension Stone, Including Rubble; Cement; Ballast. Excludes: Block, Shaped; Brick)

Class 5620. Building Glass, Tile, Brick, and Block
(Includes: Concrete Building Block; Glass Building Block; Cinder Block; Slag Block; Cut Stone; Cut and Polished Stone; Ceramic Tile; Structural Glass; Architectural Terra Cotta; Concrete Slabs and Grilles)

Class 5630. Pipe and Conduit Non-Metallic
(Includes: Clay and Concrete Pipe and Conduit; Drain Tile; Non-Metallic Pipe Fittings. Excludes: Hose and Tubing, Flexible Non-Metallic; Electrical Conduit)

Class 5640. Wallboard, Building Paper, Thermal Insulation Materials
(Includes: Paper Building Board; Ceiling Board; Gypsum Board; Insulating Board; Plasterboard; Soundproofing Board; Tar Paper; Wallpaper; Mineral Wool; Glass Wool Batts; Pipe Covering. Excludes: Electrical Insulation Materials)

Class 5650. Roofing and Siding Materials
(Includes: Roofing (all materials) including Sheet Metal; Roofing Felt; Roll Roofing; Roofing Tile; Shingles. Excludes: Tar Paper; Bulk Sheet Metal Roofing and Siding)

Class 5660. Fencing, Fences and Gates
(Includes: Wood; Metal)

Class 5670. Architectural and Related Metal Products
(Includes: Door Frames; Fixed Fire Escapes; Gratings; Grilles; Staircases; Window Sash; Gutters; Down Spouts. Excludes: Portable Fire Escapes)

Class 5680. Miscellaneous Construction Materials
(Includes: Metal Piles and Piling; Expanded Lath; Airplane Landing Matts; Traction Mats)

Illustrations considered to be an aid to or essential for positive identification are included in the applicable subsection with the identification to which they apply. The illustrations are representative of typical styles and not identical reproductions for each possible variation of them.

This catalog is now available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price 60 cents.

SAFETY STANDARDS IN CHILE

by MORRIS B. WALLACH

IN Chile, safety standards are promulgated by the Institute Nacional de Investigaciones Tecnológicas y Normalización (INDITECNOR), which is a member of the International Organization for Standardization (ISO).

The procedure for developing a new standard by INDITECNOR resembles the procedure used by the American Standards Association. In both procedures, committees are formed of interested people who have technical knowledge on the subject for which a standard is to be prepared. The committee reviews available reference material and finally develops a standard.

Copies of the standard are then circulated among technicians, industries, insurance companies, and the public who would normally be concerned with or would have an interest in the final standard, for their comments and suggestions. Thereafter, the procedure in Chile is somewhat different from that in the USA in that the final standard is submitted to a governmental agency for final approval. Copies of the standard are then printed and sold at a nominal fee.

The INDITECNOR uses available standards from other countries as basic information and guidance in the promulgation of standards in Chile. In general, American Standards constitute the greater part of this basic information. For example, the INDITECNOR standard entitled 2.68-3 Protecciones de Uso Personal (Personal Protective Equipment) was developed from the following basic reference material:

ASA L18.1-1944, Leather Aprons
ASA L18.7-1944, Welders' Leather Gauntlet Gloves
ASA L18.21-1945, Flame-Resistant Fabric Aprons (Bib Type)
ASA L18.22-1945, Flame-Resistant Fabric Leggings (Knee and Hip Length)
ASA L18.23-1945, Flame-Resistant Fabric Coats
ASA L18.24-1945, Flame-Resistant Fabric Pants
ASA L18.25-1945, Flame-Resistant Fabric Coveralls
ASA L18.26-1945, Flame-Resistant Fabric Spats
ASA L18.27-1945, Leather Spats
ASA L18.28-1945, Asbestos Spats
ASA L18.29-1945, Chemical-Resistant Gloves
ASA Z2-1938, Protection of Heads, Eyes, and Respiratory Organs, Safety Code for (NBS Handbook H24)
ASA Z41.1-1944, Men's Safety-Toe Shoes
ASA Z41.2-1944, Women's Safety-Toe (Oxford) Shoes
South African Bureau of Standards SABS-014-1948, Code of Practice for the Protection of Eyes.

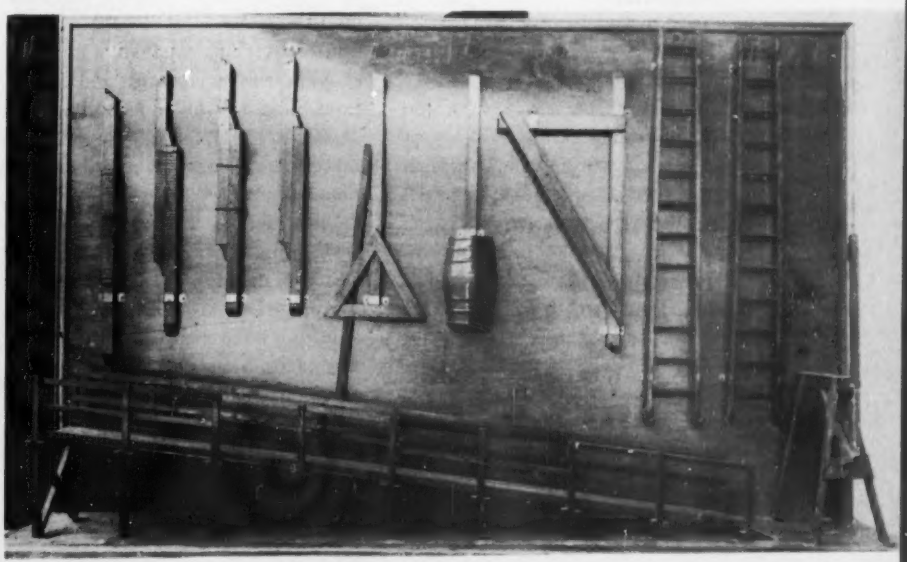
Since 1950, six safety standards have been developed and distributed in Chile. These are:

2.59-1 Custodia, Revisión Y Manejo de Peliculas Cinematográficas (Handling and Storage of Films).
2.68-1 Prescripciones Generales Acerca de Prevención de Accidentes del Trabajo (General Recommendations for the Prevention of Work Accidents).
2.68-2 Protection del Personal que Trabaja en Fundiciones (Protection of Foundry Workers).
2.68-3 Protecciones de Uso Personal (Personal Protective Equipment).
2.68-4 Senales para Prevención de Accidentes en la Industria (Safety Signs for Industry).
2.68 and 2.68-6 Elevators.

At the present time the following standards are in process:

2.53-2c Prescripciones de Seguridad en la Demolición (Safety Recommendations in Demolition).
2.53-6E Prescripciones Generales Acerca de la Seguridad de los Andamios y Cierros Provisionales (General Safety Recommendations for Temporary Scaffolding and Enclosures).
2.56-2c Medidas de Seguridad en el Almacenamiento de Explosives (Safety Measures for the Storage of Explosives).
2.56-3c Medidas de Seguridad en el Manejo de Explosivos y de Otras Sustancias Inflamables (Safety Measures for the Handling of Explosives and other Flammable Substances).
2.56-4c Medidas de Seguridad en el Transporte de Maerias Inflamables y de Explosivos (Safety Measures for Transporting Flammable Materials and Explosives).
2.56-5c Medidas de Seguridad en Caso de Incendio o de Peligro de Explosion de Depósitos de Explosivios (Safety Measures in Case of Fire or Danger of Explosion).

A display *of scaffolding and ramp construction methods in Chile. Ladder at left is defective; the one at right is good, straight, and standard.*



Mr Wallach is Safety Consultant for the Foreign Operation Administration, Santiago, Chile (on assignment from the Bureau of Labor Standards, U.S. Department of Labor).

Most of the basic information for the above standards came from the Spanish translation of the American Standard Safety Code for Building Construction, A10.2-1944. Plans are being readied for the development of other standards using this standard as basic information.

As a result of the large scale safety activities, which started in March, 1953, with the organization of the Consejo Nacional de Seguridad, a greater demand for safety standards has been created in Latin America, particularly in Chile. These safety activities include safety courses that are being conducted in the Universities and also the First Safety Congress in Latin America which was held in Santiago, Chile, in September, 1953. The INDITECNOR is working hard to develop more safety standards, particularly in the field of construction, but it cannot possibly produce more than a few standards per year. Therefore an unfilled demand for safety standards exists in Chile.

Spanish translations of American Safety Standards could be of material assistance in Latin America. Such standards would serve two purposes. First, they could be used by industry, insurance companies, and government as a guide for safer industrial operations and working conditions; second, they could be used as basic information for the promulgation of laws by the Latin American countries to better the working conditions in their industries.

• • **"Cases for Comment"** is the title of an interesting series of columns now being published in *National Safety News*. Compiled by Robert D. Gidel, Senior Engineer, Industrial Department, National Safety Council, this series features unusual accident cases on which the Z16 Committee of Judges has ruled (reported in *The Magazine of Standards* under the title "Rulings on Unusual Accidents.") The special factor of interest in Mr Gidel's column is his comment calling attention to ways in which the company concerned could have prevented the accident.

Gaillard Seminar

Twenty-two men representing 15 organizations attended Dr John Gaillard's private seminar on Industrial Standardization held in New York City, January 25 through 29, 1954. The organizations are:

***American Meter Co, Inc, Capehart-Farnsworth Co, *Celanese Corp of America, *Crouse-Hinds Co, Dominion Engineering Co, Ltd., The Falk Corp, Engineering Co, Ltd, The Falk Corp, International Business Machines Corp, Link-Belt Co, *Chas Pfizer & Co, Inc, *Raytheon Manufacturing Co, A. V. Roe Canada, Ltd, Sylvania Electric Products Inc, *U.S. Naval Ordnance Plant, Indianapolis, *University of Illinois, *Westinghouse Electric Corp.**

Eight of these organizations (marked by an asterisk) were represented for the first time at a Gaillard Seminar. The seven others had sent representatives to one or more previous conferences.

The next five-day session of the Gaillard Seminar will be held in the Engineering Societies Building, New York City, June 21 through 25, 1954. Major subjects will be the organization and procedure of company standardization work, and the technique of writing standard specifications. Advance registrations may be made by writing Dr Gaillard at his home address, 400 West 118 Street, New York 27, N. Y.

Formerly mechanical engineer on the ASA staff, Dr Gaillard is now a private management counsel specializing in advice on standardization problems. In addition to his seminars he is lecturer at Columbia University.

Research to Check Accuracy of Measurements

An investigation is now going on in the United States concerning the degree of accuracy of measurements made in the mechanical industry with particular reference to large pieces. This work is being done in cooperation with a program of research undertaken by Technical Committee 3, Limits and Fits, of the International Organization for Standardization.

The committee hopes ultimately to develop data that will be accepted internationally as ISO Recommendations concerning methods and types of measuring equipment, and conditions under which measurements should be made, in order to minimize inaccuracies in workshop measurements above 500 mm.

In order to collect information concerning practices in the USA on behalf of the ISO/TC 3 research program, the Dimensional Standards and Metrology Division of the American Ordnance Association has appointed a Committee on Measurement of Large Dimensions. I. H. Fullmer, Chief, Engineering Metrology Section, Optics and Metrology Division, National Bureau of Standards, is chairman.

Arrangements for collecting data are now under way. A series of three iron castings having external and internal lengths of approximately 30, 50, and 80 inches is nearing completion and will be measured by the Engineering Metrology Section of the National Bureau of Standards. The castings will then be circulated to various industrial plants where they will be measured in each case by the means and methods regularly applied to such work. Reports of such measurements, including a description of the instruments and methods used, will be submitted to and compiled by the Committee on Measurements of Large Dimensions.

Identification of the data with the firms submitting them will be confidential. Fourteen firms have already indicated their willingness to participate in this investigation, in order to provide data on which tolerances on large workpieces might be based. It is the desire of the Committee that all interested have the opportunity to cooperate in this work. Any one interested is invited to write to Mr I. H. Fullmer, National Bureau of Standards, Washington 25, D. C.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

003.62 SIGNS, NOTATIONS, SYMBOLS

Argentina (IRAM)

Mathematical symbols — IRAM 10

Czechoslovakia (CSN)

Mathematical symbols — CSN 01 1001

05 PERIODICALS, REVIEWS

Spain (IRATRA)

Abbreviations in periodicals — UNE 1008

025 LIBRARY ADMINISTRATION

Germany (DNA)

Rules for preparing reference cards — DIN 1426

69 BUILDING INDUSTRY AND TRADES. BUILDING CONSTRUCTION

Austria (ONA)

Specifications for stonecutter work — ÖNORM B 2213
Testing of asphalt and tar — ÖNORM B 3640

Czechoslovakia (CSN)

Door panels, wooden — CSN 2021
Door frames, wooden — CSN 2042
Window frames, wooden — CSN 2218

Germany (DNA)

Basic rules for building contracts, Parts A and B — DIN 1960/61

Poland (PKN)

45 standards in the field of building industry — *Section B*

South Africa (SABS)

Comprehensive model building regulations, Chapter 17, Advertising — SABS 038-1952
Comprehensive model building regulations, Chapter 16, Urban Aesthetics — SABS 037-1952

United Kingdom (BSI)

Structural use of timber in buildings — BS 112 (1952)
Preservative treatments — BS 112.100 (1952)
Walls and partitions of blocks and of slabs — BS 122 (1952)
Water supply — BS 310 (1952)
Telephones and telegraphs, public services — BS 327.101 (1952)
Telephones and telegraphs, private services — BS 327.102 (1952)
The structural use of steel tubes in buildings — BS CP 113.201 (1953)
Installation of optical projection equipment in educational establishments — BS CP 412 (1953)

77 PHOTOGRAPHY

Belgium (IBN)

Terminology of photographic and similar reproduction of documents — NBN 289

Canada (CSA)

Specifications for general photography — CSA Z7.0 series
Specifications for still photography — CSA Z7.2 series
Specifications for attachment threads for lens accessories — CSA Z7.2.4.11-1953
Specifications for format sizes, focal lengths, and operating temperatures for air cameras — CSA Z7.3.4.2-1953

Germany (DNA)

Films and roll films under 100 mm — DIN 4502
Contact printing frames — DIN 4504
Cable release — DIN 19004

India (ISI)

Hydroquinone, photographic grade — IS 388

United Kingdom (BSI)

Sizes of sensitized photographic plates — BS 1406:1953
16 mm projector spools — BS 2014:1953
Dimensions of x-ray films for crytallography — BS 2030:1953

332.1 BANKING

France (AFNOR)

Alphanumerical code for securities — NF K 10-40
Warranty receipts (form) — NF K 11-11

347.774 TRADE NAME, MARK

Finland (SFS)

Standard Mark of Finnish Standards Body — A.I.100

389 METROLOGY. WEIGHTS AND MEASURES. STANDARDIZATION

Argentina (IRAM)

Conversion table inch to millimeter — IRAM 5

534 VIBRATIONS. SOUND. ACOUSTICS

United Kingdom (BSI)

An artificial ear for the calibration of earphones of the external type — BS 2042:1953

535 OPTICS

Germany (DNA)

Optical bench parts — DIN 58111/3

543 ANALYTICAL CHEMISTRY

Belgium (NBN)

Determination of water hardness — NBN 304
Volumetric determination of sediment — NBN 312

Netherlands (HCNN)

5 standards for different chemical analyses — V 3100/3104

547 ORGANIC CHEMISTRY

Czechoslovakia (CSN)

Acetone, pure, for analysis — CSN 68 6000

614.8 PREVENTION OF ACCIDENTS. SAFETY MEASURES

Canada (CSA)

Specification for automobile fire fighting apparatus — CSA B89.3-1953

615.38 PAEMOTHERAPY. BLOOD TRANSFUSION

South Africa (SABS)

Standard specification for dextran saline intravenous — SABS 315-1951

615.47 MEDICAL INSTRUMENTS. APPARATUS

Finland (SFS)

Bedpans — Z.IV.54
Buckets — Z.IV.56
Solution bowls — Z.IV.60
Instrument box, type A — Z.IV.70
Sterilization room — Z.IV.300

Japan (JISC)

24 standards for various surgical instruments and equipment — JIS T 2102/2, 2301/3, 2601/7, 3102, 3202/4, 3501, 4101, 4201/2, 4401/4

620.1 TESTING MATERIALS. FAULTS IN MATERIALS

Czechoslovakia (CSN)

33 standards for different tests of nonmetallic products — CSN series 64 0100 . . .

South Africa (SABS)

Code of practice for the prevention of deterioration due to tropical conditions — SABS 046-1952

621.13 RAILWAY STEAM LOCOMOTIVES

Germany (DNA)

Back rest of engineer's collapsible seat — DIN 36146
Lentil shaped flange joint rings — DIN 31271

621.3 ELECTRICAL ENGINEERING

Argentina (IRAM)

Concentric-lay stranded conductors of annealed copper — IRAM 2022
Marking of terminals of Electric Machines and Apparatus — IRAM 2053
Rope-lay stranded conductors of annealed copper — IRAM 2084
Plates for flush mounted electric switches — IRAM 2098
Equipment for dielectric tests by means of AC — IRAM 2101
Power transformers for Radio apparatus — IRAM 4012

Volume control for radio apparatus — IRAM 4022
Wood poles for overhead lines — IRAM 4025
Dimensions and Terminals of sheets for radio transformers etc — IRAM 4049

Canada (CSA)

Construction and test of HRC fuses (low-voltage power fuses) — C22.2 No.106-1953
Rules, requirements and specifications for the joint use of poles to support supply and communication circuits — CSA C22.3 No.1(D)-1953
Construction and test of mechanisms and motors for sound recording and reproducing equipment — CSA C22.2 No.90-1953
Specification for the physical properties of power and communication wood crossarms — CSA 0116-1953
Specification for corrosion-resisting chromium-nickel steel welding electrodes — CSA W48.2-1953
Specification for control cable for electrical power plant equipment — CSA C21-1953
Construction and test of armoured cables and armoured cords — CSA C22.2 No.51-1953
Constriction and test of arc-welding cable — CSA C22.2 No.95-1953

Czechoslovakia (CSN)

Rules for the construction of overhead lines of 1500 and 3000 v — CSN 341536
Rules for protection from installations with radio active materials — CSN 341730/1
Safety provision for domestic and industrial electrical appliances — CSN 343190
List of parts for different fixed installations — CSN 344010
Graphical symbols for electrical drawings — CSN 345514
Basic testing of electrical appliances — CSN 345610
Lead-covered, paper-insulated power cables — CSN 347621
Lead-covered, rubber-insulated power cables — CSN 347636
Steel towers and poles for high-voltage lines — CSN 348240
Fittings for overhead trolley line — CSN 349200
Commutators of electric machines — CSN 350845/6, -350851
Insulated poles and tongs for operating high-voltage circuit breakers and fuses — CSN 359701/2
Safety hooks — CSN 359860
Different warning danger signs for electrical installations — CSN 359802/6
Receptacles and Edison screw lamp bases — CSN 360340/1
Connection clamps for aluminum conductors up to 16 sq. mm section — CSN 370611
Different connecting clamps for electric apparatus up to 35 kv — CSN 370910/2
Safety measures for electric stations and substations — CSN 381009
Different switch-and branch ac pannels up to 500 v — CSN 381611
Partial draft of a telecommunication vocabulary. French alphabetical index — CSN 94.1
Electrical code. Part XIV. Electric installations in mines and in explosive locations — CAST XIV
Rules for electric installations in textile and woodworking plants — CSN 34-1670
Rules for x-ray installations — CSN 34-1720
Component parts for low-voltage lines — CSN 34-4012
Bare copper wires and strips — CSN 34-7110
Bare aluminum wires and strips — CSN 34-7130
7 standards for different kinds of armature winding wires — CSN 34-7305, -7310/14, -7320
Enameled wire — CSN 34-7325
17 standards for rubber insulated copper wires and cables for different purposes — CSN 34-7401, -7460, -7410/12, -7430/32, -7435/38, -7550/52, -7556/57
12 standards for rubber insulated armored copper wires and cables for different purposes — CSN 34-7461/8, -7475/8
Aluminum power cables, rubber insulated — CSN 34-7402
5 standards for copper wire plastic insulated — CSN 34-7403, -7420/21, -7480/81
Copper and aluminum power cables, plastic sheathed — CSN 34-7619
Wooden poles for overhead lines — CSN 34-8210
49 standards for different parts of overhead line supports — CSN 34-801, -8410/42; -8445/53, -8551/56
3 standards for portable electric motors and accessories — CSN 35-0080, -9451/52
Three-phase asynchronous motors for cranes — CSN 35-0365
Electromagnetic separator for non-magnetic conveyor ent types — CSN 35-3690 DIN 41370/6
Fuses, screw-in type, 500/750v up to 100a — CSN 35-4710
Instrument, fuses, tubular — CSN 35-4730/32
Compensating capacitors for fluorescent lamps — CSN 35-8380/81
Incandescent lamps — CSN 36-0145/46
Explosion-proof lamp sockets — CSN 36-0390/93
Five standards for electric ranges and plates — CSN 36-1202/03, -1206/08
Washing machines, domestic — CSN 36-1510
Rules for connecting customers' branch line to main line — CSN 38-0610
Transformer substantions 22 kv and 100 kva, transportable — CSN 38-3710, -3715

Finland (SFS)

Electric water heaters; dimensions, connections — C.III.10
Distribution boards; busbars — C.IV.33/34
Gage for conduit screw threads — C.V.13
Three-pole cap with grounding contact, 380v, 10a — C.V.15
Two- and three-pole caps and receptacles with grounding contact, 500v, 25 and 60a — C.V.17/18
6 standards for different junction boxes — C.V.24/29

Germany (DNA)

Nominal voltages under 100v — DIN 40001
Nominal and series voltages from 100v to 380kv — DIN 40002
Transformers: rollers — DIN 42561
Transformers: air drier apparatus — DIN 42562
Installation material: fixing dimensions of lamp caps — DIN 49100
4 types two-pole receptacles and plugs for 6 amp 250v appliances — DIN 49401, -49491, -49493
6 standards for "D" plug fuse bases — DIN 49328/33
Plug and receptacle, 25 a 750v for electric trains — DIN 43216
9 standards for different types of fuses used in tele-communication — DIN 41571, B1.1/3; 41574,B1.2/3; 41576,B1.1; 41577, B1.1/2
Circuit breakers for inside, 10 to 30kv and 200 to 400a — DIN 43618
Current collector for overhead lines — DIN 43174
Single-pole brake coupling for tramways — DIN 43197
Storage batteries — DIN 40851
Battery clamps of rail-less vehicles — DIN 43574
Small ceramic capacitors, differ-

687 CLOTHING. READYMADE CLOTHING. SEWING MACHINES. TOILET ARTICLES. BRUSHES

Germany (DNA)

3 standards for sewing machine needles — DIN 5325/6, 5330

Poland (PKN)

Painters' brushes — PN B-61037
Round wire brushes — PN M-65085

United Kingdom (BSI)

Berets — BS 1908:1952

688 FANCY GOODS. TOYS. DECORATION WORK

Japan (JISC)

6 standards for different export toys — JIS Z 7109/14

693/695 SITE CONSTRUCTION. ASSEMBLY. VARIOUS TRADES

Canada (CSA)

Specification for gypsum plastering, interior furring and interior lathing — CSA A82.30-1953

Czechoslovakia (CSN)

18 standards for masons' tools — Series CSN 237810

Israel (SII)

4 standards for different types of French windows — SI 77.2/77.5

697 HEATING AND VENTILATION

Germany (DNA)

Steel-sheet or cast iron space heaters — DIN 18888
Portable ceramic space heaters — DIN 18894
Expansion cylinder for central heating systems — DIN 4806

771 PHOTOGRAPHIC MATERIALS

Germany (DNA)

Film packs, dimensions — DIN 4507

778.5 CINEMATOGRAPHY

Germany (DNA)

Glossary of cinematography terms. General — DIN 15580, B1.1

796 SPORTS AND GAMES

India (ISI)

Specifications for footballs, volley-balls, basket-balls and water polo balls — IS 417
Guts for tennis, badminton and squash rackets — IS 414
Shuttlecocks — IS 415
Cricket and hockey balls — IS 416

WHAT IS YOUR QUESTION?

How is the 8-thread series designated in the American Standard, Unified and American Screw Threads, B1.1-1949?

The 8-thread series is designated by four different symbols: 8N-2; 8N-2A or 2B; 8UN-2A or 2B; and 8NS-2. This is due largely to the use of different lengths of engagement as the basis for computing the limits of size of the various series.

The 8-thread series listed in classes 2 and 3 in the 1935 edition of American Standard B1.1 were taken over in the 1949 edition as American Thread Series 8N (Tables 8 and 9). Size limits of the 8N-2 series are given in Table 20. The size range is from 1⅛ to 6 in.

The 8N series is listed also in classes 2A and 2B (Table 9). Length of engagement differs from that for Class 2 for sizes 3 in. and up. (Footnote, Table 9.)

Limits of size for 8N-2A are given in Table 15 and for 8N-2B, in Table 18. The size range here is also 1⅛ to 6 in.

A series of 8-threads in classes 2A and 2B is listed in Tables 22 and 23 as Special Threads. Their size limits are based on a length of engagement equal to 9 pitches, or 1.1250 in. These 8-threads belong to the Unified Special Threads group and their notations are therefore 8UN-2A and 8UN-2B. Size range is from 1¾ to 6 in.

There is also a series of 8-threads in class 2, listed under American Special Threads in Table 24. These also are based on a length of engagement equal to 9 pitches. The size range is from 1⅛ to 6 in. and the notation is 8NS-2.

It should be noted that the 1 inch 8-thread is the American Standard 1 in. Coarse Thread. When used in Class 2, its notation is 1″-8NC-2 and it is listed as such in Table 20. When used as a Unified Thread in class 2A or 2B, its notation becomes 1″-8UNC-2A or 1″-8UNC-2B and it is found in Tables 15 and 18, respectively.

Is a standard available, or soon to be issued, on 20-degree straight bevel gear systems?

None of the American Standards in the B6 series on gears covers the 20-degree straight bevel systems. However, the American Gear Manufacturers Association is now developing a standard for this type gear. This is known as "20-Degree Straight Bevel Gear System, 208.01."

What is the present status of work on ISO/TC 67, Material for Pipe Lines and Other Fixed Installations in the Field of the Petroleum Industry?

As the USA member-body, the American Standards Association accepted the secretariat for this international committee last November. The American Petroleum Institute is acting as the USA group to handle this work.

What is the meaning of the symbol A-35-UNI 663 in relation to Italian tubes?

A-35 is a grade of seamless steel pipe, for which specifications are given in Italian Standard UNI 663.

Are American Standards available for preventing explosions in plants?

There are a number of standards covering specific hazards, such as toxic dusts and gases, and prevention of dust explosions in general, although there are no American Standards dealing directly with the problem of dangerous explosions in plants as a whole. There are also a number of American Standards dealing with the protection of plant personnel. These can be found under "American Safety Standards" in the new list published as Part 2 of this issue.

• • **Individual manufacturing companies** may now use the certification mark—"American Standard, AS"—ASA's Board has voted. Use had been limited to associations and societies. Details will be furnished on request.

• • **Methods, records, and terminology** used in hydrological measurements are in process of standardization by the Economic Commission for Asia and the Far East (ECAFE). A report on proposed standards has been put into final form in light of comments received from various national technical organizations, the ECAFE Bureau of Flood Control and Water Resources Development reports. The reports is to be discussed at a technical conference on water resources development at Tokyo in May 1954.

The Council of the International Organization for Standardization approved closer cooperation between ISO and ECAFE at its meeting in July 1953. At that time it recommended "that ECAFE assume the functions of a clearing house of information on standardization" and recommended to the ISO Member Bodies that ISO assist ECAFE in performing these functions.

A glossary of commercial terms used in Asia and the Far East is nearing completion. ISO Technical Committee 37 on Terminology, is now working with the ECAFE Secretariat in developing the glossary. Contents of the Glossary include commodity terms and standards (including scientific and common names of commodities, description, uses, leading producing countries, and where available, commercial terms, grades, or standards for each commodity in each country); weights, measures, and currencies; appendices. These include the membership and geographic scope of ECAFE and names of regulatory bodies on grades and standards.

• • **Please correct the symbol** for roughness height value as shown on page 63, THE MAGAZINE OF STANDARDS, February, 1954. This symbol is actually a very simple check mark: —

Waviness height value, when required, is placed above the horizontal extension line: —

• • **Lawrence L. Melick** has been appointed Manager of the Engineering Standards Department of Bailey Meter Company, Cleveland Ohio. He will coordinate standards material, methods, and handling. In addition, he continues as Supervisor of the Instruction Book Department.

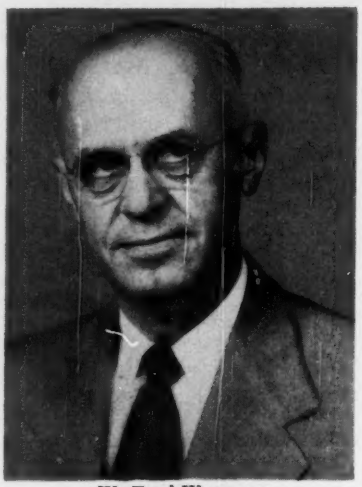
• • **Tests for colorfastness of textiles** developed through a committee of the International Organization for Standardization have been published in the Proceedings of the American Association of Textile Chemists and Colorists. The tests now being considered by the 33 countries represented on ISO Technical Committee 38. Textiles, are here made available for information and comment.

"Work is in progress on other tests, including in particular tests for colorfastness to laundering," reported William D. Appel, chairman of ASA Committee L23 and of the American Committee on ISO/TC 38.

• • **Booklet of the Month** selected by *Factory Management and Maintenance* is "Through History with Standards." "Amusing cartoons. Relax and enjoy it," advises *Factory*.

• • **W. Fred Wetmore,** representative of the Electric Light and Power Group on Sectional Committee C50, Rotating Electrical Machinery, has been named Director of the Detroit Edison's new Planning and Project Engineering Department. Mr Wetmore was formerly chief electrical engineer in the Engineering Department. The department Mr Wetmore now heads was created during a general reorganization of the Company. Two other new departments were formed—on Design Engineering, and on Engineering Coordination and Services. Edward L. Nugent, former assistant supervising engineer in Construction, heads the first; Simon Roth, former supervising engineer in Construction Engineering, heads the second.

Two new Assistant Managers of Engineering have been appointed: Edward R. Moore, former chief engineer of Edison's Engineering Department, and Harvey A. Wagner, former assistant chief of the same department. Both report directly to Howard P. Seelye, Manager of Engineering. Mr Wagner, who has been serving as coordinator of Detroit Edison's Nuclear Power Development Department, is continuing this assignment with the title of Director of Nuclear Power Development.



W. Fred Wetmore

• • **February 23 was the seventh anniversary** of the International Organization for Standardization. "The results obtained in these seven years are self evident," says Henry St Leger, General Secretary of ISO. "Member Bodies can justly be proud of their contributions to the over-all success of ISO."

• • **The twenty-fourth Annual Safety Convention and Exposition** will be held at the Hotel Statler, New York, April 5 through 9. The convention is sponsored by the Greater New York Safety Council and annually brings together more than 10,000 safety workers from all over the nation. This year 57 sessions are scheduled covering nearly all fields of industrial, home, highway, and school safety. More than 200 speakers and panel participants are expected. Among them will be nationally known safety experts, government officials, educators, law enforcement authorities, industrial and civic leaders, and members of the engineering and medical professions.

Cooperating with the Greater New York Safety Council in presenting the convention are 73 national and local agencies. The American Standards Association is one of these cooperating organizations.

An exposition of 118 displays of the latest in safety equipment, devices, and other accident-prevention aids and tests will be presented in conjunction with the convention.

E. I. du Pont, director of E. I. du Pont de Nemours & Company, is to be the principal speaker at the annual convention dinner April 8. Special sessions are scheduled on aviation, building management, schools, government employees, public utilities, hotel, marine, industry in general, home safety, petroleum, and fire protection.

• • **National standards bodies** of Finland, Germany, Portugal, and the United Kingdom have been elected as members of the Council of the International Organization for Standardization. The United Kingdom is continuing on the Council. The others replace the national standards bodies of China, Denmark, and Italy. Their term of office began January 1, 1954, and ends December 31, 1956.

• • **Sir Roger Duncalfe** has been elected president of the British Standards Institution. He succeeds the Right Honorable Viscount Waverley.

Announcing New Books . . . .

• **British Standards for Workshop Practice, B.S. Handbook No. 2:1953.** (British Standards Institution, British Standards House, 2 Park St., London, W.1, England. 630 pp. $4.50)

Forty-one standards vital to engineers, to draftsmen, and to engineering students have been collected in this 1953 edition. Numerous drawings and diagrams are included.

Analagous standards are grouped into seven sections, — Limits and Fits; Screw Threads; Gauges; Bolts, Nuts and Metal Thread Screws; Cutting Tools; Machinery Details; and Miscellaneous Data.

In its announcement of this Handbook, the BSI reports, ". . . the opportunity has been taken of including in this reprint several specifications, the basic data for which has received acceptance on both sides of the Atlantic, notably those standards for Unified Screw Threads and for Limits and Fits."

• **State Building Construction Code Applicable to Multiple Dwellings.** (State of New York. State Building Code Commission, 1740 Broadway, New York 19, N. Y. December 15, 1953.)

With this Code the New York State Building Code Commission has completed rules and regulations based on "performance standards" for all types of residential building. The first portion of the uniform state-wide code, published in 1951, covered one-and two-family dwellings. The use of "performance standards" was mandated by the Legislature through the State Building Code Law. The Commission declares that these regulations provide all municipalities of the State, at their option, with rules covering 88 percent of all new projects on which permits are issued (percentage based on construction records for the first ten months of 1953).

• **Generally Accepted Standards Applicable to State Building Construction Code.** (State of New York. State Building Code Commission, 1740 Broadway, New York 19, N. Y. December 15, 1953.)

This booklet lists standards that are considered to be "generally accepted" within the meaning of the State Building Construction Code. The Code requires that all materials, assemblies, construction, and equipment shall conform to "generally accepted standards with respect to strength, durability, corrosion resistance, fire resistance, and other qualities recognized under these standards." It defines a "generally accepted standard" as a specification, code, rule, guide or procedure in the field of construction or related thereto, recognized and accepted as authoritative. The standards are arranged to correspond with parts 3, 4, and 5 of the Code, relating to structural requirements, fire-safety requirements, and equipment requirements.

Recent Publications Received From ASA Members

American Society for Testing Materials

1916 Race Street, Philadelphia 3, Pa.

ASTM Standards on Petroleum Products and Lubricants (with Related Information) (November 1953 edition. 916 pp. $6.00.)

Many of the 146 standards contained in this publication are approved American Standards. Includes test methods, specifications, classification of diesel fuel oils, definitions of terms, and recommended practices.

ASTM Standards on Textile Materials (November 1953 edition. 696 pp. $5.25)

Includes 105 standards, including 80 test methods, also specifications, definitions of terms, tolerances for filament yarns (acetate-nylon-rayon), recommended practices. Many of these are approved American Standards.

ASTM Standards on Paper and Paper Products and Shipping Containers (with Related Information). (September 1953 edition. 396 pp. $3.50)

Specifications, test methods, and definitions developed by ASTM Committee D-6 on Paper and Paper Products, and Committee D-10 on Shipping Containers.

Report on the Elevated-Temperature Properties of Chromium-Molybdenum Steels. Special Publication No. 151. October 1953. 212 pp. $4.75

Contains 200 figures, including summary curves for 23 steels, and more than 250 data sheets for 52 steels. Second in a series of reports prepared under the auspices of the Data and Publications Panel of the ASTM-ASME Joint Committee on Effect of Temperature on the Properties of Metals.

Symposium on Insulating Oils (Fifth Series). ASTM Special Technical Publication No. 152. 52 pp. $1.25

Fifth in a series of symposiums held by Subcommittee IV on Liquid Insulation of ASTM Committee D-9 on Electrical Insulating Materials, presented at the 50th Anniversary Meeting of ASTM in June, 1952.

Symposium on Fretting Corrosion. ASTM Special Technical Publication No. 144. 88 pp. $2.00

Presented at the ASTM 50th Anniversary Meeting June 1952 and sponsored by the Technical Committee G on Lubricating Grease of Committee D-2.

American Welding Society

33 West 39th Street, New York 18, N. Y.

Recommended Practices for Postweld Heat Treatment of Austenitic Weldments (Tentative). October 22, 1953. 50 cents

Summarizes considerations necessary to determine whether, for a given application, stress relief should be used, and if so, at what time and temperature. Prepared by AWS Committee on Piping and Tubing.

Recommended Practices for Repair Welding of Cast Iron Pipe, Valves, and Fittings (Tentative). 1954. 50 cents

Materials covered include gray iron, white cast iron, chilled cast iron, malleable iron, alloy cast iron and nodular cast iron. Welding processes for which procedures are given include arc welding with nickel electrodes; oxyacetylene welding and braze welding; and carbon arc welding. Prepared by AWS Committee on Piping and Tubing.

National Board of Fire Underwriters

85 John Street, New York 38, N. Y.

Fire Resistance Ratings of Beam, Girder and Truss Protections, Ceiling Constructions, Column Protections, Floor and Ceiling Constructions, Roof Constructions, Walls and Partitions. January 1954. Revision of Appendix A, National Building Code, 1949 edition. 48 pp. Single copies free.

Contains a number of tables on fire resistance ratings of beam, girder, and truss protections; ceiling constructions; column protections; floor and ceiling constructions; roof constructions.

American Water Works Association, Inc

521 Fifth Avenue, New York 17, N. Y.

Tentative Standard Specifications for Hypochlorites, AWWA B300-53T. Approves as "Tentative" June 2, 1953. 7 pp. 20 cents

Includes material specifications and standards for sampling, inspection, packing, marking, and testing.

Radio-Electronics-Television Manufacturers Association

777 14 Street, N.W., Washington 5, D.C.

RETMA Standard Definitions and Dimensional Characteristics of Quartz Crystal Units, TR-112-A. January 1954. 30 cents

A revision of TR-112, dated August 1949. Includes the material in Standards Proposal No. 326.

Society of Automotive Engineers

29 West 39 Street, New York 18, N. Y.

Engineering Know-How in Engine Design. SP-119. 1953.
SAE Members $3.00. Nonmembers $7.50

Treatise on fundamentals of engine design which grew out of a lecture series by leading design engineers.

Tractor Production Forum. SP-303.
SAE Members $1.50. Nonmembers $3.00

Highlights problems currently facing manufacturing men in the ground vehicle industry, as discussed at the SAE 1953 National Tractor Meeting, September. Contains seven panel discussions.

Aircraft Production Forum. SP-304. (Available Jan. 15, 1954).
SAE Members $2.00. Nonmembers $4.00

Reports of nine panels at the Forum held in Los Angeles in September 1953.

International Production Forum. SP.305. (Available Jan. 20, 1954).
SAE Members $1.50. Nonmembers $3.00

Report on eight panels highlighting what Canadian and American production engineers are thinking about and doing about important manufacturing areas, such as foundry operations, materials and heat-treatment, quality control, and forgings.

AMERICAN STANDARDS

Status as of February 10, 1954

Legend

Standards Council—Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review — Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Standards Boards — Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Building

In Board of Review —

Specifications for Gypsum Partition Tile or Block, ASTM C52-41; ASA A105.1

Specifications for Standard Strength Perforated Clay Pipe, ASTM C211-50; ASA A106.1

Specifications for Drain Tile, ASTM C4-50T; ASA A6.1 (Revision of ASTM C4-24; ASA A6-1925)

Specifications for Sewer Brick (Made from Clay or Shale), ASTM C32-50; ASA A100.1

Specifications for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units, ASTM C126-52T; ASA A101.1

Specifications for Vitrified Filter Block for Trickling Filters, ASTM C159-51; ASA A102.1

Specifications for Chemical-Resistant Masonry Units, ASTM C279-52T; ASA A103.1

Definitions of Terms Relating to Structural Clay Tile, ASTM C43-50; ASA A104.1

Specifications for Granite Block for Pavement, ASTM D59-53; ASA A37.35

Method of Test for Bitumen, ASTM D4-52; ASA A37.3

Method of Test for Penetration of Bituminous Materials, ASTM D5-52; ASA A37.1

Method of Test for Abrasion of Coarse Aggregate by Use of the Los Angeles Machine, ASTM C131-51; ASA A37.7

Method of Test for Distillation of Tars and Tar Products, ASTM D20-52; ASA A37.9

Method of Test for Slump of Portland-Cement Concrete, ASTM C143-52; ASA A37.29

Method of Sampling Fresh Concrete, ASTM C172-52T; ASA A37.20

Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method, ASTM, C231-52T; ASA A37.70

Method of Test for Specific Gravity of Road Oils, Road Tars, Asphalt Cements, and Soft Tar Pitches, ASTM D70-52; ASA A37.71

Method of Test for Specific Gravity of Asphalts and Tar Pitches Sufficiently Solid to be Handled in Fragments, ASTM D71-52; ASA A37.72

Definitions of Terms Relating to Materials for Road and Pavements, ASTM D8-52; ASA A37.33
Sponsor: American Society for Testing Materials

In Construction Standards Board —

Method of Test for Time of Setting of Hydraulic Cement by Gillmore Needle, ASTM C266-51T; ASA A1.17

Specifications for Masonry Cement, ASTM C91-53; ASA A1.3

Specifications for Portland Cement, ASTM C150-53; ASA A1.1

Specifications for Air-Entraining Portland Cement, ASTM, C175-53; ASA A1.16

Methods of Test for Compressive Strength of Hydraulic Cement Mortars, ASTM C109-52; ASA A1.4

Method of Test for Chemical Analysis of Portland Cement, ASTM C114-53; ASA A1.5

Method of Test for Fineness of Portland Cement by Turbidimeter, ASTM C115-53; ASA A1.7

Method of Test for Autoclave Expansion of Portland Cement, ASTM C151-53; ASA A1.8

Methods of Test for Air Content of Portland Cement Mortar, ASTM C185-53T; ASA A1.9

Methods of Test for Heat of Hydration of Portland Cement, ASTM C186-53; ASA A1.10

Methods of Test for Time of Setting of Hydraulic Cement by Vicat Needle, ASTM C191-52; ASA A1.15

Specifications for Inorganic Aggregates for Use in Interior Plaster, ASTM C35-53T; ASA A107.1
Sponsor: American Society for Testing Materials

Methods of Fire Tests of Building Construction and Materials, A2
Sponsors: American Society for Testing Materials, National Bureau of Standards, National Fire Protection Association

Electrical

American Standards Published —

Household Automatic Electric Flatirons, C70.1-1953 $1.00
Covers definitions, ratings, marking, methods of test, performance requirements, safety requirements, and durability requirements of household automatic electric flatirons. Provides a uniform procedure for testing flatirons for compliance with the standard.
Sponsor: National Electric Manufacturers Association

Dimensional Characteristics of Electron Tubes, C60.2-1953 (Revision of C60.2-1949) $0.80
Contains outline drawings showing the standard dimensions of the following types of electron tubes: acorn, miniature, metal, metal enclosed glass, locking-in glass, "GT" glass, "G" glass, and glass.
Sponsor: Joint Electron Tube Engineering Council

Specifications for Tinned Soft or Annealed Copper Wire for Electrical Purposes, ASTM B33-53T (Revision of ASTM B3352-T), ASA C7.4-1953 $0.25
Covers tinned, round, soft or annealed copper wire for electrical purposes.

Specifications for Hard-Drawn Copper Wire, ASTM B1-53T; ASA C7.2-1953 (2nd ed) $0.25

Specifications for Bronze Trolley Wire, ASTM B9-53; ASA C7.5-1953 (2nd ed) $0.25

Specifications for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft, ASTM B8-53; ASA C7.8-1953 (2nd ed) $0.25

Specifications for Hard-Drawn Alloy Wires for Electrical Conductors, ASTM B-105-53; ASA C7.10-1953 (2nd ed) $0.25

Specifications for Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes, ASTM B189-53T; ASA C7.15-1953 (2nd ed) $0.25

Specifications for Hard-Drawn Aluminum Wire for Electrical Purposes, ASTM B230-53T; ASA C7.20-1953 (2nd ed) $0.25

Specifications for Concentric-Lay-Stranded Aluminum Conductors, Hard-Drawn, ASTM B231-53; ASA C7.21-1953 $0.25

Method for Determination of Cross-Sectional Area of Stranded Conductors, ASTM B263-53T; ASA C7.29-1953 $0.25

Specifications for Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced (ACSR), ASTM B232-53T; ASA C7.22-1953 $0.25
Sponsor: American Society for Testing Materials

American Standards Approved —

Guide for Preferred Voltage Ratings for A-C Systems and Equipment, EEI R-6; NEMA 117, C84.1-1954
Sponsor: Edison Electric Institute; National Electrical Manufacturers Association

Methods of Testing Molded Material Used for Electrical Insulation, ASTM D48-52T; ASA C59.1-1954 (Revision of C59.1-1947)
Covers a compendium of tests which apply to solid electrical insulating materials formed by a molding operation employing pressure with or without heat, and of instructions and recommendations supplementary thereto which apply to these particular materials. Dry-process porcelain is not included.

Methods of Test for Electrical Resistance of Insulating Materials, ASTM D257-52T; C59.3-1954 (Revision of C59.3-1952)
Describes test procedures for the determination of insulation resistance, volume resistance, surface resistance, volume resistivity, and surface resistivity of specimens of electrical insulating materials.

Methods of Testing Laminated Tubes Used for Electrical Insulation, ASTM D348-52; ASA C59.14-1954 (Revision of C59.14-1948)
Outlines procedures for testing laminated tubes to be used as electrical insulation.

Methods of Testing Laminated Round Rods Used for Electrical Insulation, ASTM D349-52; ASA C59.15-1954 (Revision of C59.15-1948)
Describes, in detail, procedures for testing laminated round rod materials to be used as electrical insulation.

Methods of Testing Shellac Used for Electrical Insulation, ASTM D411-52; ASA C59.18-1954 (Revision of C59.18-1945)
Covers tests for shellac, both in the dry and powdered forms, to be used for electrical insulating purposes.

Specifications for Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, ASTM D748-52T; ASA C59.26-1954 (Revision of C59.26-1951)
Covers natural block mica and mica films suitable for use in the manufacture of fixed mica-dielectric capacitors. In addition, contains a system of classifying the quality of natural block mica and mica films based on a combination of electrical and physical properties which the mica must possess.
Sponsor: American Society for Testing Materials

In Electrical Standards Board —

Method for Determining Flutter Content of Sound Recorders and Reproducers, Z57.1/68
Sponsor: Institute of Radio Engineers

Withdrawal being considered —

Dimensional Characteristics of Gaskets for Water-Cooled Transmitting Tubes, C60.3-1949
Requested by: Joint Electron Tube Engineering Council

Fuels

American Standards Published —

Definitions of the terms Gross Caloric Value and Net Caloric Value of Solid and Liquid Fuels, ASTM D407-44; ASA Z67.1-1953 $0.25

Test for Water Tolerance of Aircraft Fuels, ASTM D1094-53; ASA Z11.82-1953 $0.25
Sponsor: American Society for Testing Materials

Graphic Standards

In Graphic Standards Board —

Graphical Symbols for Electrical Diagrams, Y32.2
Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

Withdrawals requested —

Graphical Symbols for Single (One) Line Electrical Engineering Diagrams, Y32.1.1-1951

Graphical Symbols for Electric Power and Control, Z32.3-1946

Graphical Symbols for Telephone, Telegraph and Radio Use, Z32.5-1944

Graphical Symbols for Electron Devices, Z32.10-1948

Basic Graphical Symbols for Electric Apparatus, Z32.12-1947
Requested by: American Society of Mechanical Engineers; American Institute of Electrical Engineers

Mechanical

American Standards Published —

Buttress Screw Threads, B1.9-1953 $1.50
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

American Standard Approved —

Rotating Air Cylinders and Adapters, B5.5-1954 (Revision of B5.5-1932 R 1949)
Sponsors: American Society for Testing Materials; Metal Cutting Tool Institute; National Machine Tool Builders Association; Society of Automotive Engineers.

In Board of Review —

Specifications for One-Quart Round Motor Oil Cans, B64.1

Project Requested —

Terminology in the field of automatic controls
Requested by: American Society of Mechanical Engineers

Mining

In Mining Standards Board —

Quarry Safety Code, M28.1
Sponsor: National Safety Council

Miscellaneous

American Standard Approved —

Specifications for Thermometers, ASTM E1-53; ASA Z71.1-1954
Sponsor: American Society for Testing Materials

Withdrawals being considered —

Outside Dimensions of Plumbago Crucibles for Non-Tilting Furnaces in Non-Ferrous Foundry Practice, H13-1925
Requested by: American Foundrymen's Society; Crucible Manufacturers Association

Gas Floor Furnaces, CS-99-42
Requested by: American Gas Association; National Bureau of Standards

Motion Pictures

In Photographic Standards Board —

35-mm Sound Motion Picture Film Usage in Camera, PH22.2 (Revision of Z22.2-1946)

35-mm Sound Motion Picture Film Usage in Projector, PH22.2 (Revision of Z22.3-1946)

Dimensions for 8-mm Motion Picture Film, PH22.17 (Revision of Z22.17-1947)

Dimensions for 35-mm Motion Picture Positive Raw Stock, PH22.36 (Revision of Z22.36-1947)

Slides and Opaques for Television Film Camera Chains, PH22.94
Sponsor: Society of Motion Picture and Television Engineers

Paints and Varnishes

American Standards Published —

Methods of Test for Specific Gravity of Pigments, D153-52T; ASA K41.1953 $0.25

Method of Test for Mass Color and Tinting Strength of Color Pigments, ASTM D387-52T; ASA K57-1953 $0.25
Sponsor: American Society for Testing Materials

Petroleum Products and Lubricants

American Standards Published —

Test for Butadiene Dimer in Polymerization Grade Butadiene, ASTM D1024-53; ASA Z11.79-1953 $0.25

Test for Boiling Point Range of Polymerization Grade Butadiene, ASTM D1088-53; ASA Z11.80-1953 $0.25

Method of Test for Existent Gum in Fuels by Jet Evaporation, D381-52T; ASA Z11.36-1953 $0.25

Method of Test for Foaming Characteristics of Crankcase Oils, D892-46T; ASA Z11.78-1953 $0.25
Sponsor: American Society for Testing Materials

American Standards Reaffirmed —

Test for Melting Point of Paraffin Wax, ASTM D87-42; ASA Z11.4-1942 R 1947 R 1953

Test for Cloud and Pour Points, ASTM D97-47; ASA Z11.5-1948 R 1953

Methods of Analysis of Grease, ASTM D128-47; ASA Z11.16-1948 R 1953

Test for Water in Petroleum Products and Other Bituminous Materials, ASTM D9546; ASA Z11.9-1947 R 1953

Test for Burning Quality of Mineral Seal Oil, ASTM D239-30; ASA Z11.18-1930 R 1947 R 1953

Test for Burning Quality of Long-Time Burning Oil for Railway Use, ASTM D219-36; ASA Z11.19-1936 R 1947 R 1953

Test for Autogenous Ignition Temperatures of Petroleum Products, ASTM D286-30; ASA Z11.23-1932 R 1947 R 1953

Test for Dilution of Crankcase Oils, ASTM D322-35; ASA Z11.29-1935 R 1947 R 1953

Viscosity-Temperature Charts for Liquid Petroleum Products, ASTM D341-43; ASA Z11.39-1943 R 1947 R 1953

Test for Ash Content of Petroleum Oils, ASTM D482-46; ASA Z11.54-1947 R 1953
Sponsor: American Society for Testing Materials

Photography

In Photographic Standards Board —

Method for Determining Photographic Speed and Exposure Index, PH2.5 (Revision of Z38.2.1-1947)
Sponsor: Photographic Standards Board

What's New on American Standard Projects

Photographic Apparatus, PH3 —
Sponsor: Photographic Standards Board

Filter Sizes —

A proposed standard list of filter sizes believed to represent the minimum number of sizes capable of meeting requirements at the present time has been published for trial. The list was compiled after a canvass showed that there are at present many filters that differ only slightly in their external dimensions. The proposed standard applies to physical dimensions of all types of filters, including solid glass, plastic between glass, and gelatin wafers. Preferred standard sizes apply to filter disks, both mounted and unmounted; secondary standards apply to unmounted solid glass round filters. The committee hopes ultimately that it may be possible to drop the secondary standard dimensions.

Copies of the Proposed American Standard Specification for Photographic Filter Sizes, PH3.17, can be obtained from ASA at 25 cents.

Shutters —

Better information on the synchronization of camera shutters and flash lamps is the purpose of a Proposed American Standard for the internal synchronization of front shutters. The proposed standard establishes criteria for classifying and testing the operation of front shutters with built-in electrical contacts for synchronizing flash lamps. Test methods for determining synchronizing performance of a shutter are included.

All interested manufacturers of cameras, shutters, and flash lamps in the United States participated in the work on this proposed standard. However, the committee is seeking reactions to the proposal from the widest possible audience before recommending its approval as American Standard.

Copies of Proposed American Standard for the Internal Synchronization of Front Shutters, PH3.18, can be obtained from ASA at 35 cents each.

Pipe Flanges and Fittings, B16 —

Sponsors: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturing Standardization Society of the Valve and Fittings Industry.

Correct Your Standards!

B16.5-1953, Steel Pipe Flanges and Flanged Fittings—On page 55, Table 30, ¾ in. size, the dimension for welding neck (column 8) should be changed from $2\frac{1}{16}$ in. to $2\frac{1}{4}$ in.

On page 63, Table 36, ¾ in. size, the dimension for length through hub, lapped (column 7) should be changed to $1\frac{3}{8}$ in.

B16.20-1952, Ring-Joint Gaskets and Grooves for Steel Pipe Flanges—On page 11, Table 2, the width for Groove Number R90 (column 4) should be changed to $1\frac{5}{16}$ in.

Neil McDonnell

• • **Peter J. Bernard,** H. Wolff Book Manufacturing Company, has been elected chairman of Sectional Committee B65 on Safety Code for Signalling Devices and Controls for Graphic Arts Equipment. Mr Bernard is also chairman of the subcommittee working on standards for signalling devices and controls for graphic arts presses. Here he is calling attention to one of the sample control panels studied at subcommittee meetings in November and December, 1953, and January, 1954. Mounted on these display boards were typical control stations as used on commercial and publication-newspaper type printing presses. These helped the committee to visualize the variety of designs, colors, and sizes which now confront and may confuse the press crew on the job. The committee is working on recommendations for standards that it expects will reduce the possibility of accidents by increasing the effectiveness of the control buttons. Sponsors of Project B65 are the National Safety Council and the Research and Engineering Council of the Graphic Arts Industry.

B16.23-1953, Cast-Brass Solder-Joint Drainage Fittings—On page 14, Table 7b, the last entry in column 1 should read: 3 x 3 x 3 with two 1½ in. inlets.

Code for Pressure Piping, B31 —
Sponsor: The American Society of Mechanical Engineers.

INTERPRETATIONS

Submitted by the Sponsor

Pending revision of the Code for Pressure Piping, ASA B31.1-1951, Sectional Committee B31 has recommended that selected interpretations be published for the information of those interested. While these do not constitute formal revision of the Code, they may be utilized in specifications, or otherwise, as representing the considered opinion of the committee. The following cases are published as interim actions of Sectional Committee B31. They will not constitute a part of the Code until formal action has been taken by the ASME and by the American Standards Association on a revision of the Code.

Case No. 12
(Reopened)

Inquiry: Is it permissible to use material conforming to the ASTM emergency alternate provisions for phosphorus and molybdenum (ASTM EA-335)?
Reply: It is the opinion of the committee that material may be used in accordance with the emergency alternate provisions with no change in allowable stresses.

Case No. 14

Inquiry: May straight threaded couplings be used with Schedule 40 or standard weight threaded pipe in sizes 2 in. and smaller?
Reply: It is the opinion of the committee that straight threaded couplings may be used on non-noxious fluids with Schedule 40 or standard weight pipe in sizes 2 in. and smaller provided the fluid pressure does not exceed 150 psig and the temperature does not exceed 500 F. This applies to Sections 1, 3, 4, and 5 of the Code for Pressure Piping, but not to Section 2.

STANDARDS OUTLOOK

by LEO B. MOORE

WHEN we consider the basic good of standardization we see it revealed as a tool of communication and understanding with many implications for every standards engineer and his program. Some of these implications may influence our thinking with regard to specific problems such as Evaluation, Methods of Operation, and Human Relations problems. Of these, I should like to speak later. For now, I shall consider the stimulating challenge and opportunity that this underlying idea directs to standardization.

Business has become a complex affair. In this country 1776 marked the end of a political revolution, and the beginning of a basic social and economic upheaval whose magnitude and direction we cannot yet but sense. We do know that we have established an economy based on change that has resulted in a complicated chain in which social and economic shifts are intimately linked together.

At the focal point of these developments stands the business manager, who accepts change as inevitable but is struggling to manage harmoniously and effectively in his ever-changing world. He has always had change to contend with, but now the pace is faster and more devastating. The new is not simply built on the old; more often, it banishes the old entirely. To match the pace, organizations have become more complex; decisions more varied and involved.

At the core of his problems, the manager finds the failings of communication, both up and down. Decisions difficult to make under the best of conditions are complicated by an inability to obtain a timely analysis of factual data. Decisions once reached do not arrive at lower levels in a condition to permit their application with effectiveness and understanding.

The problems of communication of the manager are problems of standards. Standards are the point of contact between things and people, policy and procedure, ideas and accomplishment. Analyses of information should be based on standards. Decisions should be standards, and as such, possessed of qualities of clarity, content, and completeness that assure rightness of action and adequacy of control.

Herein lies the challenge and the opportunity. Standards engineers have set some standards that aid communication — drafting standards, material specifications, standard parts, design data, shop procedures. They have tended to neglect standards of policy, administrative procedure, cost control, equipment replacement, maintenance, tooling, product lines, customer service, and a host of matters of equal concern. Managers need these standards, but most of all they need the peculiar know-how of the standards engineer who can set standards that aid the decision-making process, and who has experience in gaining their acceptance and use.

This is a tall order and it is going to take tall men to do it. The standards engineer, to accept the challenge, must think in terms of the needs of the manager as new production techniques are developed, new industries are created, new economic frontiers established. Every standard that is developed must be analyzed in the light of the need for communication and understanding. New areas for standards activity in the company that have long gone unheeded must be sought out and filled with standards that do the job of helping managers to manage better.

Gone are the Good Old Days

NOW—

Salesmen sell to win an order
Purchasing agents buy wisely
Production men produce more quality, with lower costs
Companies meet competition by using standards

The Proceedings of the Fourth National Standardization Conference and the Thirty-fifth Annual Meeting of ASA

Here is the record of seven suggestion-packed sessions where top experts in industry told how companies are using standards . . .

- to increase production
- to cut costs
- to improve the quality of their product
- to protect employees

You will want a copy of this outstanding collection of papers and discussion to help solve your problems.

This Volume Tells You . . .

- How companies save money, increase customer good will by putting quality control to work
- What experts have learned about the effect of noise on industry workers
- What an important national figure thinks of standards in government and industry
- What a top engineer in industry has done on standards
- How companies organize their standards departments
- How purchasing agents use standards to cut company's costs
- How "automation" has been put to work in producing electronic components
- What engineering societies think of 35 years of national standards

Those who attended the Fourth National Standardization Conference found these sessions directly helpful in their work. Here is what some of them said . . . .

". . . The very practical presentations were especially helpful . . ."
— manager, quality assurance department, government research organization.

". . . the papers on standards department organization, function, and management are of particular interest . . ."
— manager, standards engineering department, an industrial company.

". . . most helpful and stimulates our own thinking toward more and better applications in our work . . ."
— purchasing engineer, industrial company.

". . . benefitted directly from much of the subject matter presented."
— chief draftsman, manufacturing company.

". . . impressed with the great work of standardization as it affects industry and the economy of our country."
— assistant to president, national labor union.

Only $3.00 per copy.

American Standards Association
70 East 45 Street, New York 17

Please send me_____copies of "The Proceedings of the Fourth National Standardization Conference and the Thirty-fifth Annual Meeting of ASA," heavy paper cover, 72 pages, at $3.00 per copy.

Title_____

Name_____

Company_____

Address_____

City_____ Zone_____ State_____

The Magazine of Standards
In Two Parts — Part 2

5401

American Standards

March 1954

American Standards Association

What It Is

The American Standards Association, Incorporated, is the American clearinghouse for standards activity on the national level. Founded in 1918, it is a federation of more than 100 trade associations, technical societies, professional groups, and consumer organizations. Some 2300 companies are affiliated with the ASA as company members.

The ASA also represents American business as the American member of the 33-nation International Organization for Standardization (ISO).

Who Uses American Standards

These standards are used widely by industry and commerce and often by municipal, state, and federal governments:

—Manufacturers use them to facilitate production operations or lower production costs, or to eliminate controversies between buyer and seller, or to raise the level of their industry by eliminating misrepresentation.
—Consumer groups, as a yardstick to measure the merit of the things they buy.
—Government agencies, in their capacity as buyers or as protectors of the public interest.

How American Standards Are Developed

The ASA provides the machinery for creating voluntary standards. It serves to eliminate duplication of standards activities and to weld conflicting standards into single, nationally accepted standards under the designation "American Standard."

Each of the 1402 standards approved to date by the ASA and listed in this booklet represents general agreement among maker, seller, and user groups as to the best current practice with regard to some specific problem. Thus the completed standards cut across the whole fabric of production, distribution, and consumption of goods and services. Manufacturers, consumers, technical organizations, and governmental agencies—all substantially interested and affected groups—are represented on the committees which develop and regularly revise American Standards.

ASA's Magazine

The Magazine of Standards keeps members of the ASA in touch with standards activities. This monthly publication presents up-to-date news of world-wide standards activities and articles on the practical application of standards in industry.

A special 14-rod binder stamped in gold *"The Magazine of Standards,* Volume 25, 1954" makes it possible to keep issues together for easy reference. Stiff covers are in black imitation leather. Volume lies flat when opened. Price, $2.50 per copy.

Table of Contents

		Page
How to Purchase American Standards		4
Index to Titles of American Standards		5
List of American Standards		
Subject	Project Letter	
Automotive	D	28
Chemical Industry	K	30
Civil Engineering and Construction	A	18
Commercial Standards	CS	42
Drawings and Symbols	Y	37
Electrical Engineering	C	23
Ferrous Materials and Metallurgy	G	28
Mechanical Engineering	B	21
Mining	M	32
Miscellaneous	Z	38
Nonferrous Materials and Metallurgy	H	29
Office Equipment and Supplies	X	37
Photography and Motion Pictures	PH	33
Pulp and Paper Industry	P	33
Rubber	J	29
Safety Standards	—	43
Textile Industry	L	31
Wood Industry	O	33
Special Publications		46

Abbreviations

AAN	American Association of Nurserymen, Inc	*CGA*	Compressed Gas Association
AAR	Association of American Railroads	*CS*	Commercial Standard
AATCC	American Association of Textile Chemists and Colorists	*IPCEA*	Insulated Power Cable Engineers Association
		IRE	Institute of Radio Engineers
AASHO	American Association of State Highway Officials	*ITE*	Institute of Traffic Engineers
		JAN	Joint Army-Navy Specification
ACI	American Concrete Institute	*NBFU*	National Board of Fire Underwriters
AIA	American Institute of Architects	*NBS*	National Bureau of Standards
AIEE	American Institute of Electrical Engineers	*NEMA*	National Electrical Manufacturers Association
API	American Petroleum Institute	*NFPA*	National Fire Protection Association
ASRE	American Society of Refrigerating Engineers	*R*	Reaffirmed
ASTM	American Society for Testing Materials	*RTMA*	Radio-Electronics-Television Manufacturers Association
AWWA	American Water Works Association		
BLS	U. S. Bureau of Labor Statistics Bulletin	*SAE*	Society of Automotive Engineers
BMTP	U. S. Bureau of Mines Technical Paper	*SPR*	Simplified Practice Recommendation

Legend

A star (★) indicates new and revised standards approved since the last (May, 1953) issue of this list

A dagger (†) indicates American Standards published by ASA to which quantity prices apply

How to Purchase American Standards

American Standards listed in this booklet can be purchased by sending your order to the American Standards Association, Incorporated, 70 East 45 Street, New York 17, N. Y. Company Members of ASA are entitled to receive copies of new American Standards as part of their membership service. Full information about membership in ASA is available on request.

All prices include postage charges, except when first class, air mail, or special delivery service is requested. Please send cash with small orders to simplify bookkeeping. For delivery in New York City, please include New York City sales tax.

Prices in this list are effective as of March 1, 1954, subject to change without notice.

Sets of American Standards

Complete set of American Standards (pp 18-42)	$390.00
Complete set of American Safety Standards (pp 43-45) ...	$ 50.00

Discounts

When any one of the American Standards published by ASA (identified †) is purchased in quantity, the following discounts apply:

1 to 9 copies.....	Single copy price
10 to 24 copies.....	15 percent
25 to 49 copies.....	17 percent
50 to 74 copies.....	20 percent
75 to 99 copies.....	22½ percent
100 to 499 copies.....	25 percent
500 copies and over.....	33⅓ percent

Public libraries, educational institutions, and book dealers are allowed a discount of 20 percent on the list prices of all American Standards unless quantity prices apply. (No discount is allowed to public libraries and educational institutions on editions of American Standards published by the National Fire Protection Association.) For lots of ten or more copies of the same, or assorted, standards priced at 25 cents, the following schedule is in effect:

1 to 9 copies.....	25 cents
10 to 24 copies.....	22½ cents
25 to 99 copies.....	21¼ cents

Binders for American Standards

(1) Three-ring binder with metal back-plate, opening boosters, and stiff cover. Title "American Standards" imprinted on front cover and backbone. Size, 9½ x 11½ inches; capacity, 1 inch. $2.00

(2) Binder provided with 30 flexible steel rods which can be slipped out of or under the top and bottom metal lips. Back of binder is rounded with metal lips riveted through backbone. Title "American Standards" imprinted on backbone; 3-inch capacity to hold pamphlets 8½ x 11 inches $2.75

Other Standards

In addition to American Standards, standards of other organizations in the United States and abroad can be purchased from the American Standards Association. Minimum charge for any order, 25 cents.

Index to Titles of American Standards

The following is an index to subject words in the titles of American Standards. These standards are listed on pages 18-42, under the general subject in which they are classified; for example, Civil Engineering, A; Mechanical Engineering, B; Electrical Engineering, C. For a complete list of subjects and their symbols, see Table of Contents, page 3. The standards are listed in alphabetical-numerical sequence. Thus American Standard B5.20-1947 can be found under section B—Mechanical Engineering, in numerical order under B5. The number following the hyphen is the year in which the standard was approved by the American Standards Association.

—A—

Abbreviations (*see also* Symbols)
- drawings ..... Z32.13-1950 (see Y32)
- scientific and engineering terms ..... Z10.1-1941 (see Y1)

Abrasive wheels, safety code B7.1-1947
Abrasives, bonded, markings B5.17-1949
Accident prevention—*see* Safety standards
Accuracy of engine lathes B5.16-1952
Acetate fabrics L22
Acoustics
- audiometers Z24.5-1951, Z24.12-1952, Z24.13-1953
- earphones, calibrations Z24.9-1949
- hearing aid characteristics Z24.14-1953
- loudspeaker testing C16.4-1942
- microphones
  - calibration Z24.4-1949
  - pressure Z24.8-1949
- noise measurement Z24.2-1942, Z24.7-1950, Z24.10-1953, Z24-X-2
- sound level meters Z24.3-1944
- symbols, letter Y10.11-1953
- terminology Z24.1-1951

Adapters, machine tools B5.5-1954, B5.11-1937
Administrative requirements for building codes A55.1-1948
Aggregates
- abrasion test A37.7-1954
- amount of material finer than No. 200 sieve A37.4-1951
- clay lumps A37.28-1948
- sieve analysis, fine and coarse A37.8-1947
- soundness A37.23-1948
- specific gravity and absorption A37.5-1943, A37.6-1943
- surface moisture A37.21-1948
- swell characteristics A37.66-1948
- unit weight A37.16-1948

Air-conditioning symbols, graphical ..... Z32.2.4-1949 (see Y32)
Air cylinders and adapters, rotating B5.5-1954
Air gaps in plumbing systems A40.4-1942
Allowable concentrations of toxic dusts and gases—*see* Toxic dusts and gases
Alloys of lead, tin, antimony, and copper K5-1922
Antennas, testing C16.11-1949
Aprons
- safety
  - asbestos L18.14-1944
  - flame-resistant fabric L18.21-1945
  - leather L18.1-1944
- women's industrial
  - bungalow L17.1-1944
  - long style L17.3-1944

Arbors B5.18-1953
Ash, test for A37.68-1948
Asphalt
- cement, road A37.71-1954
- cut-back A37.45-1951, A37.53-1948, A37.54-1948

Asphalt (*Continued*)
- emulsified A37.42-1951, A37.55-1951
- heating loss A37.32-1948
- plank A37.48-1951
- solid, handled in fragments A37.72-1954
- spot test A37.67-1948

Attachment plugs and receptacles, electrical C73
Audiometers Z24.5-1951, Z24.12-1952, Z24.13-1953
Automatic stations C37.2-1945
Automobiles (*see also* Traffic)
- glass, safety Z26.1-1950
- inspection requirements D7.1-1941
- radio interrupters and rectifiers C16.16-1949
- trucks, industrial power, safety code B56.1-1950

—B—

Backflow preventers in plumbing systems A40.6-1943
Bakery equipment, safety code Z50.1-1947
Ball and roller bearings
- gaging practice B3.4-1950
- mounting B3.8-1951, B3.9-1951
- tolerances B3.5-1951

Bars
- brass H8.1-1953, H33.1-1953
- concrete reinforcement
  - axle-steel G43.1-1942
  - billet-steel A50.1-1939
  - fabricated steel G44.1-1942
  - rail-steel A50.2-1936
  - steel A47-1932
- copper-base alloy H7.1-1953
- electrolytic copper wire H17.2-1943
- lake copper wire H17.1-1942
- refined iron G12-1936
- zinc coating G8.1-1947

Batteries
- dry cell C18-1947
- storage C40-1928

Bearings and bearing metals
- ball and roller
  - gaging practice B3.4-1950
  - mounting B3.8-1951, B3.9-1951
  - tolerances B3.5-1951
- bridge and other structural uses H31.1-1953
- locomotive H28.1-1953, H29.1-1953

Bedding
- filling materials, definitions
  - cotton L12.1-1946
  - miscellaneous L12.4-1946
  - wool L12.2-1946
- sheets and pillowcases L4.1-1948

Benzene, allowable concentration Z37.4-1941
(*see also* Petroleum products and lubricants)

Bibs (safety)
asbestos L18.15-1944
leather L18.2-1944, L18.6-1944
Binders board CS50-34
Bitumen and bituminous materials
determination of A37.3-1954
ductility A37.11-1945
float test A37.2-1951
mixing plant inspection A37.43-1951
penetration test A37.1-1954
percentage test A37.64-1948
proportion soluble in carbon tetrachloride A37.12-1943
softening point (ring-and-ball method) A37.10-1943
Blades, straight cut-off B5.21-1949
Blankets, rubber insulating J6.4-1950
Blanks, circular and dovetailed forming B5.7-1948
Blower and exhaust systems Z33.1-1950
Body sizes for boys' garments L11.1-1941
Boilers Z21.13.1-1951, Z21.33-1950
Bolts and bolting materials
alloy steel G17.2-1944, G38.1-1952
internal wrenching B18.8-1950
plow B18.9-1950
round head B18.5-1952
screw threads B1.1-1949, B1.4-1945
square and hexagon B18.2-1952
track B18.10-1952
Bookcloths CS57-40
Braid L13.1-1942
Brick
building A75.1-1953, A78.1-1952, A98.1-1953, A99.1-1953
paving A37.15-1948
sampling and testing A82.1-1951
Bridge
bearings, rolled copper-alloy H31.1-1953
steel G24.1-1947
Broilers, gas unit Z21.3-1940, Z21.3a-1946
Brushes, graphite C64-1935
Buffing—*see* Grinding, polishing, and buffing
Building code requirements
administrative A55.1-1948
earthquakes A58.1-1945
excavations and foundations A56.1-1952
gypsum concrete, reinforced A59.1-1945
joist construction, steel A87.1-1947
light A53.1-1946
loads, minimum design A58.1-1945
masonry A41.1-1953
reinforced concrete A89.1-1951
signs and outdoor display structures A60.1-1949
steel, structural A57.1-1943
ventilation A53.1-1946
Building construction safety code A10.2-1944
Building exits code A9.1-1953
Building materials—*see* specific subjects; *e.g.*, Brick, Concrete, Dimensions, Steel, Tile, etc.
Bulbs, lamp C78
Bushings, apparatus, electrical C76.1-1943
Butadiene—*see* Petroleum products and lubricants

— C —

Cable—*see* Wire (including cable)
Cableways, conveyors and related equipment, safety code B20.1-1947
Calcium chloride A37.37-1951, A37.44-1951
Cameras and camera equipment PH3, PH22
Capacitances C60
Capacitors C55.1-1951
Carbon disulfide, allowable concentration Z37.3-1941
Carbon monoxide, allowable concentration Z37.1-1941
Cards, index and record-keeping X2.4.1-1951
Cast iron
gray-iron castings G25.1-1948, G27.1-1942
malleable iron
castings G48.1-1953
cupola G49.1-1948
Cement
hydraulic
mortars A1.4-1950, A1.14-1950
normal consistency A1.11-1950
sampling A1.2-1948
soundness over boiling water A1.13-1950
specific gravity A1.12-1948
time of setting A1.15-1950
masonry A1.3-1950
oxychloride A88
portland A1.1-1950
air content A1.9-1950
air-entraining A1.16-1950
autoclave expansion A1.8-1950
chemical analysis A1.5-1948, A1.6-1950
fineness A1.7.1948
heat of hydration A1.10-1950
sand A37.34-1948
Certification procedures Z34.1-1947
Chains, transmission roller B29.1-1950, B29.2-1950
Charts and graphs
engineering and scientific charts for lantern slides ..... Z15.1-1932 (see Y15)
engineering and scientific graphs for publications ..... Z15.3-1943 (see Y15)
time-series charts ..... Z15.2-1938 (see Y15)
Chemicals, photographic PH4
Chip board CS49-34
Chromic acid and chromates, allowable concentration Z37.7-1943
Chucks and chuck jaws for turret lathes and automatic lathes B5.8-1954
Cinematography PH22
Circuit breakers C37
Circular and dovetailed forming tool blanks B5.7-1948
Cloth, shrinkage, woven cotton L10-1936
Clothing
body sizes for boys' garments L11.1-1941
flammability of textiles L14.69-1952
linemen's rubber protective
gloves J6.3-1945
sleeves J6.5-1950
protective occupational (safety)
aprons
asbestos L18.14-1944
flame-resistant fabric L18.21-1945
leather L18.1-1944
coats
asbestos L18.17-1944
flame-resistant fabric L18.23-1945
leather L18.4-1944
coveralls, flame-resistant fabric L18.25-1945
gloves
asbestos L18.9-1944, L18.10-1944
chemical-resistant L18.29-1945
leather L18.7-1944, L18.8-1944
leggings
asbestos L18.16-1944
flame-resistant fabric L18.22-1945
leather L18.3-1944
mittens
asbestos L18.11-1944, L18.12-1944, L18.20-1945
leather L18.18-1945, L18.19-1945
overalls, leather L18.5-1944
pants, flame-resistant fabric L18.24-1945
sleeves and bibs
asbestos L18.15-1944
leather L18.2-1944

Clothing *(Continued)*
sleeves, leather L18.6-1944
spats
asbestos L18.28-1945
flame-resistant fabric L18.26-1945
leather L18.27-1945
women's industrial
aprons L17.1-1944, L17.3-1944
coveralls L17.2-1944
dresses L17.1-1944, L17.4-1944
dungarees L17.2-1944
jackets L17.3-1944
overalls L17.2-1944
shirts L17.3-1944
slacks L17.2-1944
Coal
classification M20.1-1938, M20.2-1937
cubic-foot weight test K20.1-1936
definitions, bituminous and subbituminous M20.4-1939
mines
drainage M6-1931
explosives M14-1930
installing and using electrical equipment M2.1-1951
rock-dusting M13-1925
tracks; frogs, switches, and turnouts M7.1-1935, M7.2-1935
transportation, safety code M15-1931
sampling and analysis K18.1-1948, K46-1940
screen analysis, sizes M20.3-1944
Coats (safety)
asbestos L18.17-1944
flame-resistant fabric L18.25-1945
leather L18.4-1944
Coke
cubic-foot weight test K20.2-1936
sampling and analysis K18.1-1948
shatter test K20.4-1948
tumbler test K20.3-1951
volume of cell space K20.5-1936
Color (*see also* Pigments)
accident prevention signs Z35.1-1941
building exits code A9.1-1953
cast stone CS53-35
chips Z55.1-1950
codes, electronic components C16.14-1949
foundry patterns of wood B45.1-1932
gas mask canisters, identification K13.1-1950
grays, standard Z55.1-1950
marking physical hazards, identification of equipment Z53.1-1953
measurement Z58.7-1952, Z58.7.2-1951, Z58.7.3-1951
nomenclature and definitions, colorimetry field Z58.1.2-1952
piping systems, identification A13-1928
Colorfastness L14, L22
Commercial standards
binders board CS50-34
bookcloth CS57-40
chip board CS49-34
gage blanks B47.1-1941
marking
gold filled and rolled gold plate Z31-1933
karat gold CS67-38
silver in combination with gold CS51-35
mattresses
hospital CS54-35
institution CS55-35
stone, cast, colors, and finishes for CS53-35
wood, foundry patterns, color system B45.1-1932
Compressed air machinery and equipment, safety code B19-1938
Concrete
building brick A75.1-1953
compression testing A37.17-1951, A37.18-1951, A37.20-1951, A37.24-1951
Concrete *(Continued)*
cores A37.31-1951
flexure testing A37.17-1951, A37.20-1951, A37.22-1951, A37.24-1951
floors, forms A48-1932
freshly-mixed, air content A37.70-1954
gypsum A59.1-1945
masonry units A73.1-1942, A79.1-1953, A80.1-1953, A81.1-1953, A84.1-1953
portland-cement A37.26-1948, A37.29-1954
ready-mixed A37.69-1951
sampling A37.30-1954
sands, organic impurities A37.10-1951
steel reinforcement
bars A47-1932, A50.1-1939, A50.2-1936, G43.1-1942, G44.1-1942
building regulations A89.1-1951
spirals A38-1933
wire A50.3-1936, G45.1-1942
voids in fine aggregate A19-1937
weight and air content A37.27-1948
Conductors, bare electrical—*see* Wire (including cable)
Conduit C80
Construction safety code A10.1-1951, A10.2-1944
Control apparatus, electrical
automatic stations C37.2-1945
industrial C19.1-1943
railway C48-1931
Converters, pool cathode mercury-arc power C34.1-1949
Conveyors, cableways and related equipment, safety code B20.1-1947
Cooking utensils Z61.1-1949
Copper
bars—*see* Bars
battery assay K12-1921
fittings B16.22-1951
pipe H26.1-1953
rods C7.7-1953, H7.1-1953
water tube H23.1-1953
wire—*see* Wire (including cable)
Cotton mats, curing concrete pavements A37.60-1948
Coveralls
safety, flame-resistant fabric L18.25-1945
women's industrial L17.2-1944
Cranes, safety code B30.2-1943
Crystals, piezoelectric C16.17-1951
Cylinders, compressed gas
marking Z48.1-1942
valve outlet and inlet connections B57.1-1953

— D —

Decimal system
gages, wire and sheet metal B32.1-1952
inch-millimeter conversion B48.1-1953
numerical values, rounding off Z25.1-1940
Definitions
acoustical measurements, terminology Z24.1-1951
bedding and upholstery, filling materials
cotton L12.1-1946
miscellaneous L12.4-1946
wool L12.2-1946
colorimetry field Z58.1.2-1952
cooking utensils Z61.1-1949
crystals, piezoelectric C16.17-1951
electrical C42-1941
film, motion picture, nomenclature Z22.56-1947
fuel, solid and liquid Z67.1-1953
gear, nomenclature B6.10-1950
glass bulbs, nomenclature C79.1-1948
glass flares, nomenclature C79.2-1948

Definitions *(Continued)*
illuminating engineering nomenclature....Z7.1-1942
milling cutters....B5c1-1947, B5.3-1950
nuclear science and technology....Z63
petroleum terms....Z11.28-1953
photometry....Z58.1.1-1953
radiometry....Z58.1.1-1953
road and pavement materials....A37.33-1954
screw threads....B1.7-1949
textile materials....L14.12-1953
tools, single-point....B5.22-1950
wire and cable....C8.1-1944
Derricks, safety code....B30.2-1943
Desks, office....X2.1.1-1951
Detergents (*see also* Soaps)
chemical analysis and sampling....K60.21-1950
soda ash....K60.11-1949
soda, caustic....K60.10-1949
soda, modified....K60.17-1949
sodium metasilicate....K60.18-1949
sodium sesquisilicate....K60.19-1949
tetrasodium pyrophosphate....K60.20-1949
trisodium phosphate....K60.12-1949
Dimensions, building materials, coordination of....A62.1-1945
Drawings
abbreviations....Z32.13-1950 (see Y32)
drafting room practice....Z14.1-1946 (see Y14)
graphical symbols—*see* Symbols
graphs and charts—*see* Charts and graphs
Dresses, women's industrial....L17.1-1944, L17.4-1944
Drill drivers....B5.27-1951
Drinking fountains....Z4.2-1942
Dry cells and batteries....C18-1947
Dryers, gas, clothes....Z21.5-1953
Dumbwaiters, safety code....A17.1-1937, A17.3-1942
Dungarees, women's industrial....L17.2-1944
Dust control, explosions and ignitions
aluminum bronze powder....Z12.11-1953
coal pneumatic cleaning plants....Z12.7-1953
confectionery plants....Z12.18-1953
flour and feed mills....Z12.3-1953
grain elevators....Z12.4-1953, Z12.13-1953, Z12.14-1943
inert gas, use of....Z12.10-1943
magnesium powder....Z12.15-1953
plastics industry....Z12.16-1946
pulverizing systems
coal....Z12.1-1946
fuel....Z12.17-1946
sugar and cocoa....Z12.6-1953
spice grinding plants....Z12.9-1953
starch factories....Z12.2-1944
sulphur....Z12.12-1950
wood flour establishments....Z12.8-1946
woodworking plants....Z12.5-1953
Dusts and gases—*see* Toxic dusts and gases, allowable concentrations

—E—

Earphones, calibration....Z24.9-1949
Earthquakes, building code requirements....A58.1-1945
Electrical code, National....C1-1953
Electrical safety code, National....C2
Electrical terms, definitions....C42-1941
(Many standards in the electrical field also contain sections defining the terms used. These are not indexed separately. For standards in the electrical field, see specific subjects, e.g., Automatic stations; Circuit breakers; Control apparatus; etc.)
Electronics
antennas, testing....C16.11-1949
auto, interrupters and rectifiers....C16.16-1949
capacitances....C60
color codes, components....C16.14-1949
Electronics *(Continued)*
crystals, piezoelectric....C16.17-1951
equipment, components....C16.15-1949
interference, measuring....C63.1-1946
loudspeaker, testing....C16.4-1942
meters, radio noise....C63.2, C63.3
receivers
broadcast (AM), testing....C16.19-1951
broadcast (FM), testing....C16.12-1949, C16.12a-1951
vehicular communications, testing....C16.18-1951
receiving appliances, power-operated....C65.1-1952
symbols, letter, radio....Y10.9-1953
transformers and reactors, power and audio....C16.9-1943
vacuum tubes....C60
volume measurement, electrical speech and program waves....C16.5-1942
Elevators....A17
Engine lathes, accuracy....B5.16-1952
Escalators....A17.1-1937, A17.3-1942
Excavations, building code requirements....A56.1-1952
Exhaust systems....Z9, Z33.1-1950
Explosives, bituminous coal mines....M14-1930
Exposure computer, photographic....Z38.2.2-1949 listed under PH2
Eyes, protection of....Z2-1938

—F—

Filler
cement grout....A37.74-1951
mineral....A37.14-1943, A37.41-1948
preformed expansion....A37.49-1948
Film, photographic....PH1, PH22 (*see also* Processing, photographic)
Finishes, gray, industrial apparatus and equipment....Z55.1-1950
Fire prevention safety standards
blower and exhaust systems....Z33.1-1950
building construction and materials, fire tests....A2.1-1942, A2.2-1942
building exits code....A9.1-1953
dust control, explosions, and ignitions....Z12
electrical code, National....C1-1953
electrical safety code, National....C2
lightning protection....C5
mines, metal, fire fighting equipment....M17-1930
pulverizing systems
coal....Z12.1-1946
fuel....Z12.17-1946
sugar and cocoa....Z12.6-1953
welding, gas and electric....Z49.1-1950
Fits and limits for engineering....B4.1-1947
Flammability of clothing textiles....L14.69-1952
Flash point
closed tester....Z11.7-1952, Z11.24-1952
open cup....A37.65-1948, Z11.6-1952
Flatirons, household automatic electric....C70.1-1953
Floors and flooring
composition....A88
forms, concrete joist construction....A48-1932
safety code for floor openings....A12-1932
Flue linings, clay, sizes....A62.4-1947
Forging and hot metal stamping....B24.1-1952
Forgings, carbon-steel, alloy-steel....G9.1-1933
Formaldehyde, allowable concentration....Z37.16-1944
Foundations, building code requirements....A56.1-1952
Foundries
patterns of wood (color)....B45.1-1932
protection of workers....B8-1932
Fryers, gas, deep fat....Z21.27-1940, Z21.27a-1946
Fuel systems, pulverized....Z12.17-1946
Fuels (*see also* Coal; Petroleum products and lubricants)
gaseous....Z68.1-1953, Z69.1-1953
solid and liquid....Z67.1-1953

Furnaces, gas
duct Z21.34-1942
floor, gravity and fan type Z21.13.3-1951
gravity and forced air Z21.13.2-1951, Z21.13.2a-1952
Furniture, office X2.1.1-1951
Furring and lathing A42.4-1950

— G —

Gages
blanks B47.1-1941
pressure and vacuum B40.1-1939
screw thread B1.2-1941
wire and sheet metal B32.1-1952
Gaging practice
ball and roller bearings B3.4-1950
splines and serrations B5.31-1953
Garment sizes, boys' L11.1-1941
Gas
appliances, approval and installation requirements
boilers Z21.13.1-1951, Z21.33-1950
broilers, unit Z21.3-1940, Z21.3a-1946
central heating Z21.13.1-1951, Z21.13.2-1951, Z21.13.2a-1952, Z21.13.3-1951, Z21.13.4-1953
connectors Z21.32-1942
conversion burners Z21.8-1948, Z21.17-1948, Z21.38-1953, Z21.39-1953
counter Z21.31-1941
draft hoods Z21.12-1937
dryers, clothes Z21.5-1953
fryers, deep fat Z21.27-1940, Z21.27a-1946
furnaces Z21.13.2-1951, Z21.13.2a-1952, Z21.13.3-1951, Z21.34-1942
gum protective devices Z21.35-1945
heaters Z21.10-1953, Z21.11-1949, Z21.11a-1950, Z21.11b-1953, Z21.13.4-1953, Z21.16-1951, Z21.16a-1953
hose for portable Z21.2-1949
hot plates Z21.9-1948
in buildings Z21.30-1950
incinerators Z21.6-1949, Z21.6a-1953
laundry stoves Z21.9-1948
ovens, baking and roasting Z21.28-1948
pilots, automatic Z21.20-1951
ranges
domestic Z21.1-1952, Z21.1a-1953
dual oven type combination Z21.37-1948
hotel and restaurant Z21.3-1940, Z21.3a-1946
refrigerators Z21.19-1942
regulators, pressure Z21.18-1934
temperature limit controls Z21.29-1941
thermostats Z21.23-1940
tubing, semi-rigid Z21.24-1941
valves
automatic control Z21.21-1952
gas burner Z21.15-1944
relief and automatic shut-off Z21.22-1935
water heating units Z21.26-1941
cylinders for compressed
marking Z48.1-1942
valve connections B57.1-1953
inert, prevention of fire and explosion Z12.10-1943
mask canisters, identification K13.1-1950
Gaseous fuels Z68.1-1953, Z69.1-1953
Gaskets B16.20-1952, B16.21-1951
Gasoline—*see* Petroleum products and lubricants
Gears
bevel B6.8-1950
fine-pitch, inspection B6.11-1951
helical B6.7-1950
letter symbols B6.5-1949
nomenclature B6.10-1950
spur B6.1-1932, B6.7-1950
Gears *(Continued)*
tolerance and inspection B6.6-1946
worm B6.9-1950
Glass
bulbs, nomenclature C79.1-1948
flares, nomenclature C79.2-1948
safety, motor vehicles Z26.1-1950
Gloves
asbestos L18.9-1944, L18.10-1944
chemical-resistant L18.29-1945
leather L18.7-1944, L18.8-1944, J6.3-1945
rubber insulating J6.6-1952
Gold marking Z31-1933, CS67-38
Grade crossings, highway D8.1-1951
Grandstands Z20.3-1950
Granite block A37.35-1954, A37.39-1948, A37.40-1948
Graphical symbols—*see* Symbols
Graphs and charts—*see* Charts and graphs
Grays (color), finishes Z55.1-1950
Grease—*see* Petroleum products and lubricants
Grinding machines B5.32-1953, B5.33-1953
Grinding, polishing, and buffing equipment
sanitation Z43-1941
Grinding wheels and other bonded abrasives
markings B5.17-1949
(see also Abrasive wheels)
Gypsum
board
sheathing A68.1-1953
wall A69.1-1953, A97.1-1953
concrete, reinforced A59.1-1945
Keene's cement A66.1-1951
lath A67.1-1951
molding plaster A49.4-1951
plastering A42.1-1950
plasters A49.3-1951
specifications for A49.1-1951
testing A70.1-1953

— H —

Heads and eyes, protection of Z2-1938
Health standards—*see* Industrial health and safety standards
Hearing aids, measurement of characteristics Z24.14-1953
Heaters
electric
water C72.1-1949
gas
gravity and fan type, vented recessed Z21.13.4-1953
room Z21.11-1949, Z21.11a-1950, Z21.11b-1953
unit Z21.16-1951
water Z21.10-1953, Z21.16a-1953
Heating symbols, graphical ..... Z32.2.4-1949 (see Y32)
Highway—*see* Street and highway
Hoists, safety code B30.2-1943
Hoods, rubber insulator J6.2-1950
Hose
fire
cotton, rubber-lined L3.1-1941
couplings, screw threads B26-1925, B33-1-1935
line
rubber insulating J6.1-1950
Hot plates, gas Z21.9-1948
Hydrogen sulfide, allowable concentration Z37.2-1941

— I —

Illuminating engineering nomenclature Z7.1-1942
Inch-millimeter conversion B48.1-1933
Incinerators, gas Z21.6-1949, Z21.6a-1953

Indiana limestone A93.1-1948
Indicating instruments, electrical C39.1-1951, C39.3-1948
Industrial health and safety standards
abrasive wheels B7.1-1947
accident prevention signs Z35.1-1941
bakery equipment Z50.1-1947
blower systems Z33.1-1950
cableways B20.1-1947
clothing, protective occupational L18
coal mines
bituminous, explosives M14-1930
electrical equipment M2.1-1951
rock-dusting M13-1925
transportation M15-1931
color code for marking physical hazards Z53.1-1953
compressed air machinery and equipment B19-1938
construction code A10.1-1951, A10.2-1944
conveyors B20.1-1947
cranes B30.2-1943
derricks B30.2-1943
drinking fountains Z4.2-1942
dumbwaiters A17.1-1937, A17.3-1942
electrical code, National C1-1953
electrical safety code, National C2
elevators A17
escalators A17.1-1937, A17.3-1942
exhaust systems Z9, Z33.1-1938
floor openings A12-1932
forging and hot metal stamping B24.1-1952
foundries B8-1932
gas mask canisters K13.1-1950
grinding, polishing, and buffing equipment sanitation Z43-1941
heads and eyes Z2-1938
hoists B30.2-1943
jacks B30.1-1943
ladders A14.1-1952, M12.1-1946
laundry machinery and operations Z8-1941
lighting
industrial A11.1-1952
protective A85-1942
lightning protection C5
logging code B13-1924
manlifts A90.1-1949
metal mines
electrical equipment M24-1932
fire fighting equipment M17-1930
paper and pulp mills P1-1936
piping
identification systems A13-1928
pressure code B31.1-1951, B31.1.8-1952, B31.1a-1953
presses, power, foot, hand B11.1-1948
privy, sanitary Z4.3-1935
protective equipment for electrical workers J6
railings and toe boards A12-1932
rubber industry, mills and calenders B28.1-1949
sanitation, industrial Z4.1-1935
sawmill code B13-1924
shoes, safety Z41
statistics, accident Z16
tanks, open-surface Z9.1-1951
textile code L1.1-1947
tools, machine, electrical standards C74-1942
toxic dusts and gases, allowable concentrations Z37
transmission, mechanical power B15.1-1953
trucks, power B56.1-1950
wall openings A12-1932
welding, gas and electric Z49.1-1950
window cleaning code A39-1933
wire rope, mines M11-1927
woodworking machinery code O1.1-1944
x-rays, industrial use Z54.1-1946
Injury rates, compiling Z16.1-1945
Instruments, electrical
direct-acting recording C39.2-1953
indicating C39.1-1951, C39.3-1948
Insulators and insulating materials
fabricating laminated plastics, practice for C59.17-1949
gloves, rubber J6.6-1952
impact resistance, methods of test C59.11-1948
laminated round rods, methods of test C59.15-1954
laminated thermosetting products C59.16-1952
laminated tubes, methods of test C59.14-1954
mica C59.26-1954
molded, methods of test C59.1-1954
oils, sampling and testing C59.2-1944, C59.19-1952, C59.21-1951 C59.22-1951, C59.23-1951, C59.24-1951, C59.25-1951
powders, molding, methods of test C59.10-1941
protective equipment J6
resistance, electrical, methods of test C59.3-1954
rubber matting C59.4-1935
rubber tape C59.6-1952
sheet and plate materials, methods of test C59.13-1951
shellac, methods of test C59.18-1954
tests C29.1-1944
vulcanized fibre C59.20-1952
Iron—*see* Cast iron; Malleable iron

— J —

Jackets, women's industrial L17.3-1944
Jacks, safety code B30.1-1943
Jig bushings B5.6-1941
Joist construction, steel A87.1-1947

— K —

Kerosine—*see* Petroleum products and lubricants
Keys—*see* Shafting
Kitchen equipment Z61.1-1949

— L —

Ladders A14.1-1952, M12.1-1946
Lamps
bactericidal C78
bases, screw threads C44-1931
fluorescent C78, C82
glass bulbs, nomenclature C79.1-1948
glass flares, nomenclature C79.2-1948
holders and bases, screw threads C81.1-1951
incandescent C78
photographic flash Z52.43-1944
Lantern slides, charts ..... Z15.1-1932 (see Y15) *(see also* Photography, apparatus)
Lathes B5.8-1954, B5.9-1948, B5.16-1952, B5.21-1949
Lathing and furring A42.4-1950
Laundry machinery and operations, safety code Z8-1941
Laws and ordinances, state Z56
Lead
allowable concentration Z37.11-1943
blue, basic sulfate K48-1941
dry red K16.1-1944
red K24-1941
white, basic carbonate K23.1-1943
white, basic sulfate K47.1-1945
Leggings (safety)
asbestos L18.16-1944
flame-resistant fabric L18.22-1945
leather L18.3-1944
Life tests of single-point tools made of materials other than sintered carbides B5.19-1946
Lighting
building code requirements A53.1-1946
industrial A11.1-1952

Lighting *(Continued)*
protective A85-1942
schools A23.1-1948
street and highway D12.1-1953
Lightning
arresters C62.1-1944
protection
buildings C5.2-1953
persons C5.1-1953
structures containing flammable liquids and gases C5.3-1953
Limestone, Indiana A93.1-1948
Limits and fits for engineering B4.1-1947
Linseed oil
boiled K35.1-1949
raw K34.1-1949
Loads, minimum design A58.1-1945
Locomotives
bearings H28.1-1953, H29.1-1953
railway, electrical machinery C35.1-1943
Logging and sawmill safety code B13-1924
Lubricants—*see* Petroleum products and lubricants

— M —

Machine pins B5.20-1947
Machine tapers, self-holding and steep taper series ..B5.10-1953
Machine tools—*see* Tools, machine
Machinery, rotating electrical C35.1-1943, C50-1943
Malleable iron
castings G48.1-1953
cupola G49.1-1948
Manganese, allowable concentration Z37.6-1948
Manhole frames and covers A35.1-1941
Manlifts, safety code A90.1-1949
Marble, interior A94.1-1948
Marking
articles
gold filled and rolled gold Z31-1933
karat gold CS67-38
silver in combination with gold CS51-35
compressed gas cylinders Z48.1-1942
grinding wheels, bonded abrasives B5.17-1949
Masonry
building code requirements A41.1-1953
cement A1.3-1950
coordination of, basis for A62.2-1945
units A62.3-1946, A73.1-1942, A79.1-1953, A80.1-1953, A81.1-1953, A84.1-1953
Mattresses
hospitals CS54-35
institutions CS55-35
Mercury, allowable concentration Z37.8-1943
Metal mines
electrical equipment M24-1932
fire fighting equipment M17-1930
mechanical loading M19-1928
transportation M18-1928
Meteorology, symbols, letter Y10.10-1953
Meters
electrical indicating instruments C39
electricity (watt hour) C12-1941, C12a-1947
radio noise C63.2, C63.3
sound level (noise) Z24.3-1944
Methanol, allowable concentration Z37.14-1944
Methyl chloride, allowable concentration Z37.18-1949
Mica C59.26-1954
Microfilm PH3
Microphones
calibration Z24.4-1949
pressure Z24.8-1949
Millimeter, inch, conversion B48.1-1933
Milling
cutters B5c1-1947, B5.3-1950
machines B5.18-1953
Mines, coal—*see* Coal mines
Mines, metal—*see* Metal mines
Minimum design loads in buildings A58.1-1945
Mittens (safety)
asbestos L18.11-1944, L18.12-1944, L18.20-1945
leather L18.18-1945, L18.19-1945
Modular coordination A62
Mortars
hydraulic-cement A1.4-1950, A1.14-1950
portland-cement A1.9-1950
Motion pictures PH22
Motor vehicles—*see* Automobiles

— N —

National electrical code C1-1953
National electrical safety code C2
Nitrogen, oxides, allowable concentration Z37.13-1944
Noise measurement—*see* Acoustical measurements
Nomenclature—*see* Definitions
Nuclear science and technology Z63
Numerical values, rounding off Z25.1-1940
Nursery stock Z60.1-1952
Nuts B18.2-1952, B18.10-1952

— O —

Office equipment and supplies X2.1.1-1951, X2.1.2-1952, X2.4.1-1951
Oil—*see* Insulators and insulating materials; Petroleum products and lubricants
Ordinances—*see* Laws
Ores, screen testing M5-1932
Ovens, baking and roasting, gas Z21.28-1948
Overalls
leather (safety) L18.5-1944
women's industrial L17.2-1944
Oxychloride compositions A88

— P —

Paints—*see* Color; Pigments
Pants, flame-resistant fabric L18.24-1945
Paper
photographic PH1
subgrade A37.61-1948
Paper and pulp mills, safety code P1-1936
Patterns, foundry (color) B45.1-1932
Paving materials—*see* specific headings, *e.g.*, Asphalt; Granite block; Concrete; etc.
Paving plant inspection A37.43-1951
Penetration test
bituminous materials A37.1-1954
residue A37.13-1943
Periodicals, reference data and arrangement Z39.1-1943
Petroleum products and lubricants, tests
aircraft fuels Z11.82-1953
ash content Z11.54-1947
autogenous ignition temperatures Z11.23-1932
benzene and toluene, by ultra-violet spectrophotometry Z11.70-1951
burning quality
kerosine oils Z11.17-1949
long-time burning oil for railway use Z11.19-1936
mineral seal oil Z11.18-1930
butadiene
acetylene test Z11.74-1952
boiling point range Z11.80-1953
carbonyl content Z11.81-1953

Petroleum products and lubricants, tests *(Continued)*
- determination of content Z11.66-1950
- dimer test Z11.79-1953
- nonvolatile residue Z11.76-1952
- residue separation Z11.75-1952

carbon residue
- (Conradson) Z11.25-1952
- (Ramsbottom) Z11.47-1952

carbonizable substances
- in mineral oil Z11.49-1945
- in paraffin wax Z11.50-1945

cloud and pour points Z11.5-1948
color
- refined oil Z11.35-1953

crankcase oil Z11.29-1935, Z11.78-1953
definition of terms Z11.28-1953
distillation of crude petroleum Z11.32-1952
flash points Z11.6-1952, Z11.7-1952, Z11.24-1952
fuel oil
- sediment Z11.58-1949
- thermal value Z11.14-1950

gas oils Z11.26-1953
gasoline
- detection, free sulfur Z11.21-1930
- distillation Z11.10-1953, Z11.11-1953, Z11.77-1952
- oxidation stability Z11.60-1949, Z11.63-1949
- tetraethyl lead in Z11.48-1949

gum content in fuels Z11.36-1953
gravity Z11.31-1952
grease, analysis Z11.16-1948
insulating oils C59.2-1944, C59.21-1951, C59.22-1951, C59.23-1951, C59.24-1951, C59.25-1951
interfacial tension, oil against water Z11.64-1950
kerosine, distillation Z11.10-1953
lubricating grease
- cone penetration Z11.3-1952
- dropping point Z11.51-1943
- oxidation stability Z11.65-1950
- viscosity Z11.72-1951

lubricating oils
- analysis for metals Z11.56-1949
- precipitation number Z11.30-1952
- sodium Z11.73-1951
- sulfated residue Z11.57-1949, Z11.68-1951

measurement tables, ASTM-IP Z11.83-1953
motor fuels, knock characteristics Z11.37-1953, Z11.69-1953
naphtha, distillation Z11.10-1953
neutralization value, electrometric titration Z11.59-1952
olefinic plus aromatic hydrocarbons in distillates Z11.71-1951
paraffin wax
- melting point Z11.4-1942
- oil content Z11.52-1953

petrolatum
- melting point Z11.22-1949
- pharmaceutical Z11.61-1949

plant spray oils
- distillation Z11.43-1952
- unsulfonated residue Z11.41-1952

sampling Z11.33-1935
saponification number Z11.20-1952, Z11.67-1952
Stoddard solvent Z11.42-1952
sulfur, bomb method Z11.13-1952
vapor pressure Z11.44-1952
viscosity Z11.2-1953, Z11.39-1943, Z11.45-1953, Z11.46-1953, Z11.53-1953
water Z11.9-1947

Photography
- apparatus PH3
- films PH1
- motion pictures PH22
- papers PH1
- plates PH1
- processing PH4
- sensitometry PH2

Photometric standards Z7.1-1942
Photometry definitions Z58.1.1-1953
Pigments (*see also* Color)
- acetone extract, lampblack, bone black K55-1941
- alkalinity or acidity K51-1941
- bleeding K52-1941
- bone black K36.1-1947
- chrome green K28.1-1947
- chrome oxide green K37.1-1946
- chrome yellow and orange K27.1-1947
- coarse particles K42.1-1945
- hygroscopic moisture K53-1941
- iron blue K29.1-1947
- iron oxide, mineral K25-1941
- lampblack K26.1-1947
- lead
  - blue, basic sulfate K48-1941
  - dry red K16.1-1944
  - red K24-1941
  - white, basic carbonate K23.1-1943
  - white, basic sulfate K47.1-1945
- mercuric oxide, dry K59-1941
- oil absorption K54-1941
- para red toner, C.P. K49-1941
- specific gravity K41-1953
- tinting strength
  - mass color K57-1953
  - white K56-1941
- titanium dioxide K45-1941
- white, analysis K15.1-1947
- yellow and orange K58-1941
- yellow, orange, red and brown K44.1-1951
- zinc oxide K22.1-1944
- zinc yellow (zinc chromate), C.P. K50.1-1949

Pillowcases L4.1-1948
Pins, machine B5.20-1947
Pipe and piping (*see also* Plumbing and plumbing equipment; Tubes and tubing)
- brass, red H27.1-1953
- cast iron
  - cement mortar lining A21.4-1953
  - culvert G26.1-1942
  - gas A21.3-1953, A21.7-1953, A21.9-1953
  - metal welds A21.6-1953
  - sand-lined welds A21.8-1953
  - soil A40.1-1935
  - strength and thickness, computation A21.1-1939
  - threaded, for drainage, vent and waste services A40.5-1943
  - water and other liquids A21.2-1953
- copper H26.1-1953
- flanges and fittings
  - alloy steel castings G36.1-1944
  - bolting materials, alloy steel G17.2-1944, G38.1-1952
  - brass B16.18-1950, B16.23-1953
  - brass or bronze
    - 125 lb B16.15-1947
    - 150 and 300 lb B16.24-1953
    - 250 lb B16.17-1949
  - carbon steel castings G17.1-1944
  - cast iron
    - all sizes, maximum WSP, 25 lb per sq in. B16b2-1931
    - all sizes, maximum WSP, 250 lb per sq in. B16b-1944
    - class 125 ..... B16.1-1948
    - 800 lb hydraulic B16b1-1931
    - mechanical joint A21.11-1953
    - refrigerant B16.16-1948

Pipe and Piping *(Continued)*
screwed drainage B16.12-1953
screwed, maximum WSP, 125 and 250 lb per sq in. B16.4-1949
3 inch to 12 inch, 250 psi A21.10-1952
copper and bronze solder joint B16.22-1951
face-to-face dimensions, ferrous welding end valves B16.10-1939
ferrous plugs, bushings, locknuts with pipe threads B16.14-1949
forged or rolled steel G17.3-1947, G37.1-1949 G46.1-1947
gaskets B16.20-1952, B16.21-1951
malleable iron screwed
150 lb B16.3-1951
300 lb B16.19-1951
refrigerant expansion valves B60.1-1950
steel B16.5-1953, B16.9-1951, B16.11-1946
identification system A13-1928
pressure code B31.1-1951, B31.1.8-1952, B31.1a-1953
steel
seamless B36.21-1950, B36.22-1950, B36.24-1950, B36.25-1950
stainless B36.19-1952
symbols, graphical ..... Z32.2.3-1949 (see Y32)
threads B2.1-1945
welded
austenitic stainless B36.26-1950
electric-fusion B36.4-1942, B36.9-1950, B36.11-1942
electric resistance B36.5-1950
lap-welded and seamless B36.3-1950
open-hearth iron B36.26-1950
steamless steel B36.1-1950
spiral, steel or iron B36.16-1945
wrought-iron B36.2-1950
zinc-coated B36.20-1951
wrought-steel and wrought-iron B36.10-1950
Pitch, coal-tar A37.38-1948, A37.57-1948
Plastering
gypsum A42.1-1950
portland cement A42.3-1946
Plastics—*see* Insulators and insulating materials
Plates
photographic PH1
steel G20-1939, G40.1-1943
Plugs and receptacles, electrical C73
Plumbago crucibles H13-1925
Plumbing and plumbing equipment *(see also* Pipe and piping) A40
symbols, graphical ..... Z32.2.2-1949 (see Y32)
Poles, tubular steel C13-1926
Poles, wood, specifications and dimensions O5.1-1948
Portland cement
plastering A42.3-1946
stucco A42.2-1946
Power transmission, mechanical, safety code B15.1-1953
Preferred numbers Z17.1-1936
Preferred thickness for uncoated thin metals B32.1-1952
Presses; power, foot and hand, safety code B11.1-1948
Pressure piping B31.1-1951, B31.1.8-1952, B31.1a-1953
Printing equipment, photographic PH3
Privy, sanitary Z4.3-1935
Processing, photographic PH4
Projection equipment, photographic PH3, PH22
Pulverizing systems
coal Z12.1-1946
fuel Z12.17-1946
sugar and cocoa Z12.6-1953
Pumps, lubricating and coolant, mounting dimensions B5.28-1952
Punch and die sets for two-post punch press tools B5.25-1950

— Q —

Quality control Z1

— R —

Radio — *See* Electronics
Radiometry definitions Z58.1.1-1953
Railings and toe boards A12-1932
Railroad, grade crossing protection D8.1-1951
Railway
electric control apparatus C48-1931
locomotives, electrical machinery C35.1-1943
Ranges
electric, domestic C71.1-1950
gas
domestic Z21.1-1952, Z21.1a-1953
dual oven-type combination Z21.37-1948
hotel and restaurant Z21.3-1940, Z21.3a-1946
Rayon fabrics L22
Reactors C57
Reamers B5.14-1949
Receivers
broadcast (AM), testing C16.19-1951
broadcast (FM), testing C16.12-1949
vehicular communications, testing C16.18-1951
Receptacles and plugs, electrical C73
Recording instruments, electrical C39.2-1953
Refrigeration, mechanical
expansion valves, rating and testing B60.1-1950
safety code B9.1-1953
shipboard installation B59.1-1950
Refrigerators
household
automatic B38.1-1944, B38.2-1944
gas Z21.19-1942
ice B38c1-1931
Regulators C57
Relays C37.1-1950
Respiratory organs, protection Z2-1938
Rivets and riveting material
large B18.4-1950
small solid B18.1-1953
steel G21-1939, G28.1-1942, G42.1-1942
Road materials—*see* specific headings, *e.g.*, Bitumen and bituminous materials; Definitions; Filler; Tar products, etc
Rock, toughness test A37.73-1951
Rods
aluminum, rolled C7.23-1951
brass
for screw machines H8.1-1953
leaded red H33.1-1953
copper
base alloy H7.1-1953
hot-rolled C7.7-1951
Rope
leaf and bast fibers L14.45-1953
wire M11-1927
Rosin, determination of toluol insoluble matter K21.1-1953
Rotating air cylinders and adapters B5.5-1954
Rotating electrical machinery C35.1-1943, C50-1943
Rounding off numerical values Z25.1-1940
Rubber
matting C59.4-1935
mills and calenders, safety code B28.1-1949
products; test methods J1.1-1953
protective equipment J6
tape, insulating C59.6-1952
vulcanized, test methods J2.1-1953, J3.1-1942, J4.1-1953, J5.1-1953

— S —

Safety standards
abrasive wheels B7.1-1947
accident prevention signs Z35.1-1941
automobiles, inspection D7.1-1941

Safety standards *(Continued)*
bakery equipment Z50.1-1947
blower systems Z33.1-1950
buffing equipment sanitation Z43-1941
building construction and materials, fire tests A2.1-1942, A2.2-1942
building exits code A9.1-1953
cableways B20.1-1947
clothing, protective occupational L18
coal mines
bituminous, explosives M14-1930
electrical equipment M2.1-1951
rock-dusting M13-1925
transportation M15-1931
color code for marking physical hazards Z53.1-1953
compiling
accident causes Z16.2-1941
injury rates Z16.1-1945
compressed air machinery and equipment B19-1938
construction code A-10.1-1951, A10.2-1944
conveyors B20.1-1947
cranes B30.2-1943
derricks B30.2-1943
drinking fountains Z4.2-1942
dumbwaiters A17.1-1937, A17.3-1942
dust control, explosions and ignitions Z12
electrical code, National C1-1953
electrical safety code, National C2
elevators A17
escalators A17.1-1937, A17.3-1942
exhaust systems Z9, Z33.1-1950
flammability of clothing textiles L14.69-1952
floor openings A12-1932
forging and hot metal stamping B24.1-1952
foundries B8-1932
gas cylinders
marking of compressed Z48.1-1942
valve connections B57.1-1953
gas mask canisters K13.1-1950
glass, safety, motor vehicles Z26.1-1950
grade crossings, highways D8.1-1951
grandstands Z30.3-1950
grinding equipment sanitation Z43-1941
grinding wheels, bonded abrasives B5.17-1949
heads and eyes, protection Z2-1938
hoists B30.2-1943
jacks B30.1-1943
ladders A14.1-1952, M12.1-1946
laundry machinery and operations Z8-1941
lighting
industrial A11.1-1952
protective A85-1942
schools A23.1-1948
street and highway D12.1-1953
lightning protection C5
logging code B13-1924
manlifts A90.1-1949
metal mines
electrical equipment M24-1932
fire fighting equipment M17-1930
paper and pulp mills P1-1936
piping
gas, installation Z21.30-1950
identification systems A13-1928
pressure code B31.1-1951, B31.1.8-1952, B31.1a-1953
polishing equipment sanitation Z43-1941
presses, power, hand, foot B11.1-1948
privy, sanitary Z4.3-1935
protective equipment for electrical workers J6
pulverizing systems
coal Z12.1-1946
fuel Z12.17-1946
sugar and cocoa Z12.6-1953

Safety standards *(Continued)*
railings and toe boards A12-1932
refrigeration, mechanical B9.1-1953, B59.1-1950
rubber industry, mills and calenders B28.1-1949
sanitation, industrial Z4.1-1935
sawmill code B13-1924
shoes, safety Z41
statistics, accident Z16
tanks, open-surface Z9.1-1951
tents Z20.3-1950
textile code L1.1-1947
tools, machine, electrical standards C74-1942
toxic dusts and gases, allowable concentrations Z37
traffic
automobiles, inspection D7.1-1941
control devices D6.1-1948
control signal heads, adjustable face D10.1-1951
glass, safety, motor vehicles Z26.1-1950
grade crossing protection D8.1-1951
signal controllers D11.1-1943, D13.1-1950
transmission, mechanical power B15.1-1953
trucks, industrial power B56.1-1950
ventilation, open-surface tanks Z9.1-1951
wall openings A12-1932
welding, gas and electric Z49.1-1950
window cleaning A39-1933
wire rope for mines M11-1927
woodworking machinery O1.1-1944
x-rays, industrial use Z54.1-1946
Sand
cement A37.34-1948
coal and lignite in A37.25-1948
organic impurities A37.19-1951
Sanitation, industrial Z4.1-1935
School lighting A23.1-1948
Screw threads
acme B1.5-1945, B1.8-1952
buttress B1.9-1953
definitions B1.7-1949
fire hose couplings B26-1925, B33.1-1935
gages and gaging B1.2-1941
pipe *(see also* Pipe and piping, flanges and fittings) B2.1-1945
rolled, for lamp holders and bases C81.1-1951
straight, for high-temperature bolting B1.4-1945
symbols, letter B1.7-1949
taps B5.4-1948
unified B1.1-1949
valve connection, cylinders B57.1-1953
Screws
hexagon and square B18.2-1952
slotted and recessed head, machine, cap, wood, tapping, and headless types B18.6-1947
socket set and socket head B18.3-1947
Sensitometry, photographic PH2
Serrations, involute B5.26-1950, B5.31-1953
Shafting B17.1-1943
couplings, hydro-electric units B49.1-1947
stock keys B17.1-1943
transmission B17c-1927
Woodruff keys B17f-1930
Sheet metal gages B32.1-1952
Sheets
uncoated wrought-iron G23-1939
zinc-coated
iron or steel G8.2-1951
wrought-iron G8.8-1937
Sheets (bedding) L4.1-1948
Shellac, methods of test C59.18-1954
Shirts, women's industrial L17.3-1944
Shoes, safety Z41
Shrinkage, woven cotton cloth L10-1936
Sieves, testing Z23.1-1939

Signs and outdoor display structures, building code requirements A60.1-1949
Silver with gold, marking CS51-35
Single-point tools B5.19-1946, B5.22-1950
Slacks, women's industrial L17.2-1944
Sleeves (safety)
  asbestos L18.15-1944
  leather L18.2-1944, L18.6-1944
  rubber J6.5-1950
Sleeving, tubular L13.1-1942
Soaps (*see also* Detergents)
  bar K60.2-1953
  chip K60.1-1952
    compound K60.8-1949
    olive oil K60.15-1949
    palm oil K60.16-1953
  powdered K60.3-1952
    alkaline K60.5-1949
    built K60.7-1949
    compound K60.9-1949
  salt-water K60.13-1949
  toilet
    liquid K60.14-1952
    milled K60.6-1949
    white floating K60.4-1949
Soda
  ash K60.11-1949
  caustic K60.10-1949
  modified K60.17-1949
Sodium chloride A37.56-1948
Sodium metasilicate K60.18-1949
Sodium sesquisilicate K60.19-1949
Soils
  cement mixtures A37.50-1948, A37.51-1948, A37.52-1948, A37.58-1948
  centrifuge moisture equivalent A37.46-1948
  field moisture equivalent A37.47-1948
Solid and liquid fuels Z67.1-1953
Sound—*see* Acoustics
Spats (safety)
  asbestos L18.28-1945
  flame-resistant fabric L18.26-1945
  leather L18.27-1945
Spindle noses B5.9-1948, B5.18-1953
Splines, involute B5.15-1950, B5.31-1953
Sprocket teeth, transmission B29.1-1950, B29.2-1950
State laws and ordinances Z56
Statistics
  accident Z16
  quality control Z1
Steel
  boiler G28.1-1942, G29.1-1945, G30.1-1943, G31.1-1947, G32.1-1947, G33.1-1945, G34.1-1947, G35.1-1947
  bolting material, alloy G17.2-1944
  bridges and buildings G24.1-1947
  castings G17.1-1944, G50.1-1945, G51.1-1944, G52.1-1944
  forgings G9.1-1933
  joist construction A87.1-1947
  locomotives and cars G39.1-1947
  plates G20-1939, G40.1-1943
  rivet G21-1939, G28.1-1942, G42.1-1942
  silicon G41.1-1947
  structural, design, fabrication, erection A57.1-1952
  thermal analysis Z30.2-1953
  zinc coating G8
Steel, concrete reinforcement
  bars A47-1932, A50.1-1939, A50.2-1936, G43.1-1942, G44.1-1942
  spirals A38-1933
  wire A50.3-1936, G45.1-1942
Stoddard solvent Z11.42-1952
Stone, cast, colors and finishes for CS53-35
Stone, slag, gravel, sand and stone block A37.75-1951
Storage batteries C40-1928
Stoves, gas laundry Z21.9-1948
Street and highway
  lighting D12.1-1953
  traffic control D6.1-1948
Stucco, portland cement A42.2-1946
Surface roughness B46.1-1947, B46.2-1952
Switchgear C37
Symbols (*see also* Abbreviations)
  graphical (all graphical symbol standards with "Z" numbers are listed under Y32)
    air-conditioning Z32.2.4-1949
    architectural plans, electrical Z32.9-1943
    diagrams, single line electrical engineering Y32.1.1-1951
    electric apparatus Z32.12-1947
    electric traction Z10g5-1933
    electronic devices (tubes) Z32.10-1948
    heat-power apparatus Z32.2.6-1950
    heating Z32.2.4-1949
    pipe and piping Z32.2.3-1949
    plumbing Z32.2.2.1949
    power, control and measurement, electrical Z32.3-1946
    radio Z32.5-1944
    railroad equipment Z32.2.5-1950
    railway signaling Z10g5-1933
    telephone and telegraph Z32.5-1944
    ventilating Z32.2.4-1949
    welding Z32.2.1-1949
  letter (for all Z10 standards turn to Y10)
    acoustics Y10.11-1953
    aeronautical sciences Z10.7-1950
    chemical engineering Z10.12-1946
    electrical quantities Z10.5-1949
    gear engineering B6.5-1949
    heat and thermodynamics Z10.4-1943
    hydraulics Z10.2-1942
    illuminating and photometric Z7.1-1942
    mathematical Z10f-1928
    mechanics, solid bodies Z10.3-1948
    meteorology Y10.10-1953
    physics Z10.6-1948
    radio Y10.9-1953
    screw threads B1.7-1949
    structural analysis Z10.8-1949

—T—

T-slots—their bolts, nuts, tongues, and cutters B5.1-1949
Tables, office X2.1.1-1951
Tanks, open-surface, ventilation, safety Z9.1-1951
Tapers, machine B5.10-1953
Taps, cut and ground threads B5.4-1948
Tar
  pitches A37.72-1954
  products A37.9-1954, A37.36-1948
  road A37.59-1951, A37.71-1954
  volume correction table A37.57-1948
Teeth, transmission sprocket B29.1-1950, B29.2-1950
Telemetering equipment C37.2-1945
Telephone equipment on desks X2.1.2-1952
Television
  receivers, testing C16.13-1949
  receiving appliances, power-operated C65.1-1952
  signal levels, resolution and timing of video switching systems C16.20-1951
Temperature limit controls, gas Z21.29-1941
Tents Z20.3-1950
Terminal markings, electrical apparatus C6.1-1944
Tetrasodium pyrophosphate K60.20-1949
Textiles
  acetate and rayon fabrics L22
  asbestos L14
  colorfastness L14, L22

Textiles *(Continued)*
- cotton L14
- definitions L14.12-1953
- felt L14.52-1953
- flammability of clothing L14.69-1952
- glass fabrics L14
- jute L14
- knit goods L14
- machines, testing L14.66-1951
- men's wearing-apparel fabrics L22
- rayon L14, L22
- rope L14.45-1949
- safety code L1.1-1947
- shrinkage, woven cotton cloth L10-1936
- test methods L14, L22
- tolerances L14
- toweling and bathmat fabrics L22
- water resistance L14
- women's wearing-apparel fabrics L22
- wool L14
- yarns L14

Thermometers Z71.1-1954
Tile, drain A6.1-1954
Tile, structural A74.1-1953, A76.1-1953, A77.1-1953, A83.1-1953
Timber
- piles, round O6-1939
- small clear specimens O4a-1927
- static tests O4b-1927

Time-series charts ..... Z15.2-1938 (see Y15)
Tolerances B4.1-1947
Toluene
- allowable concentration Z37.12-1943
- insoluble matter in rosin K21.1-1953

Tools, machine
- adjustable adapters B5.11-1937
- arbors B5.18-1953
- blades, straight cut-off B5.21-1949
- chucks and chuck jaws B5.8-1954
- circular and dovetailed forming blanks B5.7-1948
- drill drivers B5.27-1951
- electrical standards C74-1942
- engine lathes B5.16-1952
- grinding machines B5.32-1953, B5.33-1953
- jig bushings B5.6-1941
- knurling B5.30-1953
- lathes B5.9-1948
- machine pins B5.20-1947
- machine tapers B5.10-1953
- markings for grinding wheels and other bonded abrasives B5.17-1949
- milling
  - cutters B5c1-1947, B5.3-1950
  - machines B5.18-1953
- pumps, lubricating and coolant, mounting dimensions B5.28-1952
- punch and die sets B5.25-1950
- reamers B5.14-1949
- rotating air cylinders and adapters B5.5-1954
- serrations, involute B5.26-1950
- single point B5.19-1946, B5.22-1950
- spindle noses B5.9-1948, B5.18-1953
- splines, involute B5.15-1950, B5.31-1953
- T-slots, bolts, nuts, tongues, cutters B5.1-1949
- taps, cut and ground threads B5.4-1948
- twist drills B5.12-1950

Toxic dusts and gases, allowable concentrations
- benzene Z37.4-1941
- carbon disulfide Z37.3-1941
- carbon monoxide Z37.1-1941
- chromic acid and chromates Z37.7-1943
- formaldehyde Z37.16-1944

Toxic Dusts and Gases *(Continued)*
- hydrogen sulfide Z37.2-1941
- lead and certain of its inorganic compounds Z37.11-1943
- manganese Z37.6-1948
- mercury Z37-8-1943
- methanol Z37.14-1944
- methyl chloride Z37.18-1949
- nitrogen oxides Z37.13-1944
- toluene Z37.12-1943
- trichloroethylene Z37.19-1946
- xylene Z37.10-1948

Traffic
- automobile, inspection requirements D7.1-1941
- control devices D6.1-1948
- control signal heads, adjustable face D10.1-1951
- glass, safety, motor vehicles Z26.1-1950
- grade crossing protection D8.1-1951
- signal controllers D11.1-1943, D13.1-1950
- street and highway lighting D12.1-1953

Transformers, regulators, and reactors C57
- power and audio C16.9-1943

Trichloroethylene, allowable concentration Z37.19-1946
Trisodium phosphate K60.12-1949
Trucks—*see* Automobiles
Tubes and tubing (*see also* Pipe and piping)
- boiler
  - electric-resistance-welded B36.13-1945, B36.18-1945
  - lap-welded B36.12-1945
  - medium-carbon seamless steel B36.15-1945
  - seamless alloy-steel B36.17-1945
  - seamless steel B36.14-1945
- copper A40.2-1936, H23.1-1953

Turpentine K32.1-1953, K33-1937
Twist drills B5.12-1950

— U —

Upholstery
- filling materials, definitions
  - cotton L12.1-1946
  - miscellaneous L12.4-1946
  - wool L12.2-1946

Utensils, cooking Z61.1-1949

— V —

Vacuum tubes C60
Valve connections, compressed gas cylinder B57.1-1953
Valves B16.10-1939, B60.1-1950
Ventilation
- building code requirements A53.1-1946
- symbols, graphical ..... Z32.2.4-1949 (see Y32)
- tanks, open-surface Z9.1-1951

Viscosity, specific, test for ..... A37.63-1948 (*see also* Petroleum products and lubricants, tests)
Voltage
- measurement, dielectric tests C68.1-1953
- preferred C67.1-1951, C84.1-1954

— W —

Washers
- lock B27.1-1950
- plain B27.2-1953

Water, quality used in concrete A37.62-1948
Welding
- electric and gas, safety Z49.1-1950
- resistance C52.3-1945, C52.4-1945, C52.5-1945
- symbols, graphical ..... Z32.2.1-1949 (see Y32)

Wet tests, electrical C77.1-1943
Window cleaning, safety code A39-1933

Wire (including cable)
bare electrical conductors C7
bars
electrolytic copper H17.2 1942
lake copper H17.1-1942
brass H32.1-1953
concrete reinforcement A50.3-1936
flexible cord and fixture C33.1-1953
general purpose H30.1-1953
insulated C8, C9
ropes for mines M11-1927
zinc-coated (galvanized) steel
barbed G8.10-1948
fencing G8.9-1948
strand G8.6-1943, G8.11-1944
telephone and telegraph line G8.3-1944
tie G8.4-1935
Wiring, electric (National Electrical Code) C1-1953
Wood—*see* Timber
Wood poles—*see* Poles, wood
Woodruff keys B17f-1930
Woodworking machinery, safety code O1.1-1944
Wrought-iron sheets G8.8-1937, G23-1939

– X –

X-rays, industrial use, safety code Z54.1-1946
Xylene, allowable concentration Z37.10-1948

– Z –

Zinc
coating
barbed wire G8.10-1948
chain-link fence fabric G8.5-1945
conduit C80
pipe, steel B36.20-1951
sheets G8.2-1951, G8.8-1937
steel shapes, plates, bars G8.1-1947
telephone and telegraph line wire G8.3-1944
tie wire, iron and steel G8.4-1935
wire fencing G8.9-1948
wire strand G8.6-1943, G8.11-1944
rolled H25.1-1943
slab (spelter) H24.1-1949

American Standards

For abbreviations and explanation of reference markers see page 3

A — Civil Engineering and Construction

(Special price of series, $45.00)

		Price
A1.1-1950	Portland Cement, Specifications for (ASTM C150-49)	.25
A1.2-1948 R1950	Sampling Hydraulic Cement, Methods of (ASTM C183-46)	.25
A1.3-1950	Masonry Cement, Specifications for (ASTM C91-49) *Under revision*	
A1.4-1950	Compressive Strength of Hydraulic Cement Mortars, Method of Tests for (ASTM C109-49) *Under revision*	
A1.5-1948 R1950	Chemical Analysis of Portland Cement, Methods of (ASTM C114-47; AASHO T105-48 [Part I])	.50
A1.6-1950	Chemical Analysis of Portland Cement, Methods of (ASTM C114-48T)	
A1.7-1948 R1950	Fineness of Portland Cement by the Turbidimeter, Method of Test for (ASTM C115-42; AASHO T98-45)	.25
A1.8-1950	Autoclave Expansion of Portland Cement, Method of Test for (ASTM C151-49)	.25
A1.9-1950	Air Content of Portland Cement Mortar, Method of Test for (ASTM C185-49T) *Under revision*	
A1.10-1950	Heat of Hydration of Portland Cement, Method of Test for (ASTM C-186-49)	.25
A1.11-1950	Normal Consistency of Hydraulic Cement, Method of Test for (ASTM C187-49)	.25
A1.12-1948 R1950	Specific Gravity of Hydraulic Cement, Method of Test for (ASTM C188-44)	.25
A1.13-1950	Soundness of Hydraulic Cement Over Boiling Water (Pat Test), Method of Test for (ASTM C189-49)	.25
A1.14-1950	Tensile Strength of Hydraulic Cement Mortars, Method of Test for (ASTM C190-49)	.25
A1.15-1950	Time of Setting of Hydraulic Cement by the Vicat or Gillmore Needles, Methods of Test for (ASTM C191-49) *Under revision*	
A1.16-1950	Air-Entraining Portland Cement, Specifications for (ASTM C175-48T) *Under revision*	
A2.1-1942	Fire Tests of Building Construction and Materials, Methods of (ASTM E119-41) *Under revision*	
A2.2-1942	Fire Tests of Door Assemblies, Methods of (ASTM E152-41)	.25
A6.1-1954	Drain Tile, Specifications for (ASTM C4-50T)	.25
A9.1-1953	Building Exits Code (NFPA 101; AIA 40-B-7)	1.00
A10.1-1951	Manual of Accident Prevention in Construction	3.00
A10.2-1944	†Building Construction, Safety Code for	1.75
A11.1-1952	Industrial Lighting	.50
A12-1932	†Floor and Wall Openings, Railings, and Toe Boards, Safety Code for	.50
A13-1928 R1947	Identification of Piping Systems, Scheme for the	.60
A14.1-1952	†Portable Wood Ladders, Safety Code for	.75
A17.1-1937	Elevators, Dumbwaiters, and Escalators, Safety Code for, with Supplement A17.3-1942	1.50
A17.1.5-1953	★Private Residence Elevators, Safety Code for	1.00
A17.2-1945	Elevators, Inspection of (Inspectors' Manual)	1.50
A19-1937	Void in Aggregates for Concrete, Method of Test for (ASTM C30-37; AASHO T20-42)	.25

A21 — Cast Iron Pipe and Fittings:

A21.1-1939	Computation of Strength and Thickness of Cast-Iron Pipe, Manual for the (AWWA C101)	.65
A21.2-1953	Cast-Iron Pit Cast Pipe for Water or Other Liquids, Specifications for (AWWA C102)	.45
A21.3-1953	Cast Iron Pit Cast Pipe for Gas, Specifications for	.25
A21.4-1953	Cement Mortar Lining for Cast-Iron Pipe and Fittings, Specifications for (AWWA C104)	.35
A21.6-1953	Cast Iron Pipe Centrifugally Cast in Metal Molds for Water or Other Liquids, Specifications for (AWWA C106)	.40
A21.7-1953	Cast Iron Pipe Centrifugally Cast in Metal Molds for Gas, Specifications for	.25
A21.8-1953	Cast Iron Pipe Centrifugally Cast in Sand-Lined Molds, for Water or Other Liquids, Specifications for (AWWA C108)	.45
A21.9-1953	Cast Iron Pipe Centrifugally Cast in Sand Lined Molds for Gas, Specifications for	.25
A21.10-1952	Short-Body, Cast-Iron Fittings, 3 Inch to 12 Inch, for 250-Psi, Water Pressure Plus Water Hammer, Specifications for (AWWA C110)	.35
A21.11-1953	Mechanical Joint for Cast Iron Pressure Pipe and Fittings, Specifications for (AWWA C111)	.35
A23.1-1948	School Lighting (AIA 31-F-28)	.50
A35.1-1941 R1947	Manhole Frames and Covers for Subsurface Structures	.50

A37 — Road and Paving Materials:

A37.1-1954	★Penetration of Bituminous Materials, Method of Test for (ASTM D5-52; AASHO T49-52)	.25
A37.2-1951	Float Test for Bituminous Materials, Method of (ASTM D139-49; AASHO T50-49)	.25
A37.3-1954	★Determination of Bitumen, Method of Test for (ASTM D4-52)	.25
A37.4-1951	Amount of Material Finer than No. 200 Sieve in Aggregates, Method of Test for (ASTM C117-49; AASHO T11-49)	.25
A37.5-1943 R1948	Specific Gravity and Absorption of Coarse Aggregate, Method of Test for (ASTM C127-42)	.25
A37.6-1943 R1948	Specific Gravity and Absorption of Fine Aggregate, Method of Test for (ASTM C128-42; AASHO T84-45)	.25
A37.7-1954	★Abrasion of Coarse Aggregate by Use of the Los Angeles Machine, Method of Test for (ASTM C131-51; AASHO T96-51)	.25
A37.8-1947 R1948	Sieve Analysis of Fine and Coarse Aggregates, Method of Test for (ASTM C136-46; AASHO T27-46)	.25

		Price
A37.9-1954	★Distillation of Tar Products Suitable for Road Treatment, Method of Test for (ASTM D20-52; AASHO T52-52)	.25
A37.10-1943 R1948	Softening Point of Bituminous Materials (Ring-and-Ball Method), Method of Test for (ASTM D36-26; AASHO T53-42)	.25
A37.11-1945 R1948	Ductibility of Bituminous Materials, Method of Test for (ASTM D113-44; AASHO T51-44)	.25
A37.12-1943 R1948	Proportion of Bitumen Soluble in Carbon Tetrachloride, Method of Test for (ASTM D165-42)	.25
A37.13-1943 R1948	Residue of Specified Penetration, Method of Test for (ASTM D243-36; AASHO T56-42)	.25
A37.14-1943 R1948	Sieve Analysis of Mineral Filler, Method of Test for (ASTM D546-41; AASHO T37-42)	.25
A37.15-1948	Paving Brick, Specifications for (ASTM C7-42; AASHO M40-42 and T31-42)	.25
A37.16-1948	Unit Weight of Aggregate, Method of Test for (ASTM C29-42; AASHO T19-45)	.25
A37.17-1951	Making and Curing Concrete Compression and Flexure Test Specimens in the Field, Method of (ASTM C31-49; AASHO T23-49)	.25
A37.18-1951	Compressive Strength of Molded Concrete Cylinders, Method of Test for (ASTM C39-49, AASHO T22-49)	.25
A37.19-1951	Organic Impurities in Sands for Concrete, Method of Test for (ASTM C40-48)	.25
A37.20-1951	Securing, Preparing, and Testing Specimens from Hardened Concrete for Compressive and Flexural Strengths, Methods of (ASTM C42-49; AASHO T24-49)	.25
A37.21-1948	Surface Moisture in Fine Aggregate, Method of Test for (ASTM C70-47)	.25
A37.22-1951	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading), Method of Test for (ASTM C78-49; AASHO T97-49)	.25
A37.23-1948	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate, Method of Test for (ASTM C88-46T; AASHO T104-46)	.25
A37.24-1951	Compressive Strength of Concrete Using Portions of Beams Broken in Flexure (Modified Cube Method), Method of Test for (ASTM C116-49; AASHO T140-49)	.25
A37.25-1948	Coal and Lignite in Sand, Method of Test for (ASTM C123-44; AASHO T113-45)	.25
A37.26-1948	Flow of Portland-Cement Concrete by Use of the Flow Table, Method of Test for (ASTM C124-39; AASHO T120-42)	.25
A37.27-1948	Weight per Cubic Foot, Yield, and Air Content (Gravimetric) of Concrete, Method of Test for (ASTM C138-44; AASHO T121-45)	.25
A37.28-1948	Clay Lumps in Aggregates, Method of Test for (ASTM C142-39; AASHO T112-42)	.25
A37.29-1954	★Slump Test for Consistency of Portland-Cement Concrete, Method of (ASTM C143-52; AASHO T119-52)	.25
A37.30-1954	★Sampling of Fresh Concrete, Method of (ASTM C172-52T)	.25
A37.31-1951	Measuring Length of Drilled Concrete Cores, Method of (ASTM C174-49; AASHO T148-49)	.25
A37.32-1948	Loss on Heating of Oil and Asphaltic Compounds, Method of Test for (ASTM D6-39T; AASHO T47-42)	.25
A37.33-1954	★Terms Relating to Materials for Roads and Pavements, Definitions of (ASTM D8-52)	.25
A37.34-1948	Materials for Sand-Cement Bed for Brick and Block Pavements, Specifications for (ASTM D58-37)	.25
A37.35-1954	★Granite Block for Pavements, Specifications for (ASTM D59-53)	.25
A37.36-1948	Softening Point of Tar Products (Cube-in-Water Method), Method of Test for (ASTM D61-38)	.25
A37.37-1951	Calcium Chloride, Specifications for (ASTM D98-48; AASHO M144-49)	.25
A37.38-1948	Coal-Tar Pitch for Stone Block Filler, Specifications for (ASTM D112-30)	.25
A37.39-1948	Recut Granite Block for Pavements, Specifications for (ASTM D131-39)	.25
A37.40-1948	Granite Block for Durax Pavements, Specifications for (ASTM D132-39)	.25
A37.41-1948	Mineral Filler for Sheet Asphalt and Bituminous Concrete Pavements, Specifications for (ASTM D242-39; AASHO M17-42)	.25
A37.42-1951	Testing Emulsified Asphalts, Methods of (ASTM D244-49; AASHO T59-49)	.25
A37.43-1951	Bituminous Paving Plant Inspection (ASTM D290-51)	.25
A37.44-1951	Sampling and Testing Calcium Chloride, Methods of (ASTM D345-48; AASHO T143-49)	.25
A37.45-1951	Distillation of Cut-Back Asphaltic Products, Method of Test for (ASTM D402-49)	.25
A37.46-1948	Centrifuge Moisture Equivalent of Soils, Method of Test for (ASTM D425-39); AASHO T94-42)	.25
A37.47-1948	Field Moisture Equivalent of Soils, Method of Test for (ASTM D426-39; AASHO T93-42)	.25
A37.48-1951	Asphalt Plank, Specifications for (ASTM D517-50)	.25
A37.49-1948	Preformed Expansion Joint Fillers for Concrete (Non-extruding and Resilient Types), Specifications for (ASTM D544-41; AASHO M58-42)	*Under revision*
A37.50-1948	Moisture-Density Relations of Soil-Cement Mixtures, Method of Test for (ASTM D558-44; AASHO T134-45)	.25
A37.51-1948	Wetting-and-Drying Test of Compacted Soil-Cement Mixtures, Method of (ASTM D559-44; AASHO T135-45)	.25
A37.52-1948	Freezing-and-Thawing Test of Compacted Soil-Cement Mixtures, Method of (ASTM D560-44; AASHO T136-45)	.25
A37.53-1948	Cut-back Asphalt (Rapid Curing Type), Specifications for (ASTM D597-46; AASHO M81-42)	.25
A37.54-1948	Cut-back Asphalt (Medium Curing Type), Specifications for (ASTM D598-46; AASHO M82-42)	.25
A37.55-1951	Slow-Setting Emulsified Asphalt (for Fine Aggregate Mixes), Specifications for (ASTM D631-49)	.25
A37.56-1948	Sodium Chloride, Specifications for (ASTM D632-43)	.25
A37.57-1948	Volume Correction Table for Tar and Coal-Tar Pitch (ASTM D633-44)	.25
A37.58-1948	Cement Content of Soil-Cement Mixtures, Method of Test for (ASTM D806-47)	.25
A37.59-1951	Sulfonation Index of Road Tars, Method of Test for (ASTM D872-48; AASHO T108-48)	.25

		Price
A37.60-1948	Cotton Mats for Curing Concrete Pavements, Specifications for (AASHO M73-38)	•
A37.61-1948	Subgrade Paper, Specifications for (AASHO M74-38)	•
A37.62-1948	Quality of Water to Be Used in Concrete, Method of Test for (AASHO T16-35)	•
A37.63-1948	Specific Viscosity (Engler), Method of Test for (AASHO T54-35)	•
A37.64-1948	Percentage of Bitumen and Bituminous Mixtures, Method of Test for (AASHO T58-37)	•
A37.65-1948	Flash Point with Tagliabus Open Cup, Method of Test for (AASHO T79-42)	•
A37.66-1948	Swell Characteristics of Aggregates, Methods of Test for (AASHO T101-42)	•
A37.67-1948	Spot Test of Asphaltic Materials, Method of Test for (AASHO T102-42)	•
A37.68-1948	Inorganic Matter or Ash, Method of Test for (AASHO T111-42)	•
A37.69-1951	Ready-Mixed Concrete, Specifications for (ASTM C94-48)	.25
A37.70-1954	★Air Content of Freshly Mixed Concrete by the Pressure Method, Method of Test for (ASTM C231-52T)	.25
A37.71-1954	★Specific Gravity of Road Oils, Road Tars, Asphalt Cements, and Soft Tar Pitches, Method of Test for (ASTM D70-52)	.25
A37.72-1954	★Specific Gravity of Asphalts and Tar Pitches Sufficiently Solid To Be Handled in Fragments, Method of Test for (ASTM D71-52)	.25
A37.73-1951	Toughness of Rock, Method of Test for (ASTM D3-18)	.25
A37.74-1951	Materials for Cement Grout Filler for Brick and Stone Block Pavements, Specifications for (ASTM D57-20)	.25
A37.75-1951	Sampling Stone, Slag, Gravel, Sand, and Stone Block for Use as Highway Materials, Methods of (ASTM D75-48)	.25
A38-1933	Steel Reinforcing Spirals (SPR R53-32)	*Out of print*
A39-1933	†Window Cleaning.	*Under revision—Out of print*
A40.1-1935	Cast-Iron Soil Pipe and Fittings	.80
A40.2-1936	Brass Fittings for Flared Copper Tubes	.50
A40.4-1942	Air Gaps in Plumbing Systems	.55
A40.6-1943	Backflow Preventors in Plumbing Systems	
A40.5-1943	Threaded Cast-Iron Pipe for Drainage, Vent, and Waste Services	.50
A40.7-1949	Plumbing Code	2.50
A41.1-1953	★†Masonry, Building Code Requirements for	*In press*
A42.1-1950	Gypsum Plastering, Specifications for (AIA 20-A-2)	.60
A42.4-1950	Interior Lathing and Furring, Specifications for (AIA 21-A-2)	
A42.2-1946	Portland Cement Stucco, Specifications for (AIA 21-D)	.50
A42.3-1946	Portland Cement Plastering, Specifications for (AIA 21-A-4)	
A48-1932	†Forms for Concrete Joist Construction Floors	.25
A49.1-1951	Gypsum, Specifications for (ASTM C22-50)	.25
A49.3-1951	Gypsum Plasters, Specifications for (ASTM C28-50)	.25
A49.4-1951	Gypsum Molding Plaster, Specifications for (ASTM C59-50)	.25
A50.1-1939	Billet-Steel Bars for Concrete Reinforcement, Specifications for (ASTM A15-39)	*Under revision*
A50.2-1936	Rail-Steel Bars for Concrete Reinforcement, Specifications for (ASTM A16-35)	*Under revision*
A50.3-1936	Cold-Drawn Steel Wire for Concrete Reinforcement, Specifications for (ASTM A82-34; AASHO M32-42)	.25
A53.1-1946	†Light and Ventilation, Building Code Requirements for	.75
A55.1-1948	†Administrative Requirements for Building Codes	.50
A56.1-1952	Excavations and Foundations, Building Code Requirements for	.80
A57.1-1952	Design, Fabrication and Erection of Structural Steel for Buildings, Specification for the	*Gratis*
A58.1-1945	†Minimum Design Loads in Buildings and Other Structures, Building Code Requirements for	.75
A59.1-1945	†Reinforced Gypsum Concrete, Building Code Requirements for	*Under revision*
A60.1-1949	†Signs and Outdoor Display Structures, Building Code Requirements for	.50

A62 — Modular Coordination:

A62.1-1945	†Coordination or Dimensions of Building Materials and Equipment, Basis for the	.35
A62.2-1945	†Coordination of Masonry, Basis for the	.35
A62.3-1946	†Clay and Concrete Modular Masonry Units, Sizes of	.50
A62.4-1947	†Clay Flue Linings, Sizes of	.35
A66.1-1951	Keene's Cement, Specifications for (ASTM C61-50)	.25
A67.1-1951	Gypsum Lath, Specifications for (ASTM C37-50)	.25
A68.1-1953	Gypsum Sheathing Board, Specifications for (ASTM C79-52)	.25
A69.1-1953	Gypsum Wall Board, Specifications for (ASTM C36-52)	.25
A70.1-1953	Testing Gypsum and Gypsum Products, Methods of (ASTM C26-52)	.25
A73.1-1942 R1950	Concrete Masonry Units for Construction for Catch Basins and Manholes, Specifications for (ASTM C139-39)	.25
A74.1-1953	Structural Clay Load-Bearing Wall Tile, Specifications for (ASTM C34-52)	.25
A75.1-1953	Concrete Building Brick, Specifications for (ASTM C55-52)	.25
A76.1-1953	Structural Clay Non-Load-Bearing Tile, Specifications for (ASTM C56-52)	.25
A77.1-1953	Structural Clay Floor Tile, Specifications for (ASTM C57-52)	.25
A78.1-1952	Sand-Lime Building Brick, Specifications for (ASTM C73-51)	.25
A79.1-1953	Hollow Load-Bearing Concrete Masonry Units, Specifications for (ASTM C90-52)	.25
A80.1-1953	Hollow Non-Load-Bearing Concrete Masonry Units, Specifications for (ASTM C129-52)	.25
A81.1-1953	Solid Load-Bearing Concrete Masonry Units, Specifications for (ASTM C145-52)	.25

*Available only in 2-volume edition (not sold separately) of Standard Specifications for Highway Materials and Methods of Sampling and Testing, published by AASHO, 917 National Press Building, Washington 4, D. C., $6.00.

		Price
A82.1-1951	Sampling and Testing Brick, Methods of (ASTM C67-50)	.25
A83.1-1953	Sampling and Testing Structural Clay Tile, Methods of (ASTM C112-52)	.25
A84.1-1953	Sampling and Testing Concrete Masonry Units, Methods of (ASTM C140-52)	.25
A85-1942	†Protective Lighting for Industrial Properties (American War Standard)	*Out of print*
A87.1-1947	†Steel Joist Construction, Building Code Requirements for	.35

A88 — Oxychloride Cements:

A88.1-1951	Preparation of Subfloors to Receive Oxychloride Composition Flooring, Specification for (AIA 23-D)	.85
A88.2-1952	General Purpose Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	
A88.3-1952	Heavy Duty Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	
A88.4-1952	Basecoat Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	
A88.5-1952	Non-Slip Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	.35
A88.6-1952	Terrazzo Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	.35
A88.7-1952	Industrial Granolithic Oxychloride Composition Flooring and Its Installation, Specifications for (AIA 23-D)	.35
A88.8-1952	Oxycement Underlayment and Its Installation, Specifications for (AIA 23-D)	.35
A88.10-1953	★Magnesium Oxychloride Compositions and Ingredients, Method of Sampling (ASTM C237-51)	.25
A88.11-1953	★Sieve Analysis of Magnesium Oxychloride Compositions, Aggregates, and Fillers, Method of Test for (ASTM C238.51)	.25
A88.12-1953	★Sieve Analysis of Plastic Calcined Magnesia, Method of Test for (ASTM C239-51)	.25
A88.13-1953	★Chemical Analysis of Magnesium Sulfate, Technical Grade, Methods for (ASTM C244-52)	.25
A88.14-1953	★Chemical Analysis of Magnesium Chloride, Methods for (ASTM C245-52)	.25
A88.15-1953	★Physical Testing of Magnesia for Magnesium Oxychloride Cements, Method of (ASTM C246-52)	.25
A88.16-1953	★Ignition Loss and Active Calcium Oxide in Magnesium Oxide for Use in Magnesium Oxychloride Cements, Methods of Test for (ASTM C247-52)	.25
A88.17-1953	★Bulk Density of Magnesium Oxychloride Cements, Method of Test for (ASTM C248-52)	.25
A88.18-1953	★Field Consistency of Magnesium Oxychloride Cements, Method of Slump Test (ASTM C249-52)	.25
A88.19-1953	★Field Determination of Specific Gravity of Gauging Solutions for Magnesium Oxychloride Cements, Specifications for, and Method for (ASTM C250-51)	.25
A88.20-1953	★Mixing Magnesium Oxychloride Cement Compositions with Gauging Solution (for Preparation of Specimens for Laboratory Tests), Method for (ASTM C251-52)	.25
A88.21-1953	★Linear Contraction of Magnesium Oxychloride Cements, Method of Test for (ASTM C252-52)	.25
A88.22-1953	★Linear Change of Magnesium Oxychloride Cements, Method of Test for (ASTM C253-52)	.25
A88.23-1953	★Setting Time of Magnesium Oxychloride Cements, Method of Test for (ASTM C254-52)	.25
A88.24-1953	★Consistency of Magnesium Oxychloride Cements by the Flow Table, Method of Test for (ASTM C255-52)	.25
A88.25-1953	★Flexural Strength of Magnesium Oxychloride Cements (Using Simple Bar with Two-Point or Single-Point Loading), Method of Test for (ASTM C256-52)	.25
A88.26-1953	★Compressive Strength of Magnesium Oxychloride Cements, Method of Test for (ASTM C257-52)	.25
A89.1-1951	Reinforced Concrete, Building Code Requirements for (ACI 318-51)	.50
A90.1-1949	Manlifts, Safety Code for	.55
A93.1-1948	Indiana Limestone, Specifications for	.50
A94.1-1948	†Interior Marble, Specifications for	.50
A97.1-1953	Gypsum Wallboard Interior Finishes, Specifications for	.35
A98.1-1953	Building Brick (Solid Masonry Units made from Clay or Shale), Specifications for (ASTM C62-50)	.25
A99.1-1953	Facing Brick (Solid Masonry Units made from Clay or Shale), specifications for (ASTM C216-50)	.25

B — Mechanical Engineering

(Special price of series, including abbreviation and symbol standards, $100.00)

B1 — Screw Threads:

B1.1-1949	Unified and American Screw Threads for Screws, Bolts, Nuts, and Other Threaded Parts	3.00
B1.2-1951	Screw Thread Gages and Gaging	4.00

ASME Screw Thread Manual — A Shop and Drafting Room Abridgement of the American-Unified Standards for Screw Threads and Their Gages, American Standards B1.1-1949 and B1.2-1951, 68 pages, price $2.50

B1.4-1945	Screw Threads for High-Strength Bolting	*Under revision—Out of print*
B1.5-1952	Acme Screw Threads	2.25
B1.7-1949 R1953	Nomenclature, Definitions and Letter Symbols for Screw Threads	.50
B1.8-1952	Stub Acme Screw Threads	1.25
B1.9-1953	★Buttress Screw Threads	1.50
B2.1-1945	Pipe Threads	1.50
B3.4-1950	†Gaging Practices for Ball and Roller Bearings	.50
B3.5-1951	†Tolerances for Ball and Roller Bearings	.75
B3.8-1951	†Bearing Mounting for Ball and Roller Bearings, Specifications for	1.00
B3.9-1951	†Bearing Mounting Accessories, Specifications for	.50
B4.1-1947	Limits and Fits for Engineering and Manufacturing (Part I)	.50

Tolerances for cylindrical fits
(A primer — not a standard), price 50 cents

		Price
B5 — Small Tools and Machine Tool Elements:		
B5c1-1947	Milling Cutter Teeth, Nomenclature for	.70
B5.1-1949	T-Slots—Their Bolts, Nuts, Tongues and Cutters	.50
B5.3-1950	Milling Cutters, Nomenclature, Principal Dimensions, etc.	2.25
B5.4-1948	Taps, Cut and Ground Threads	1.50
B5.5-1954	★Rotating Air Cylinders and Adapters	*In press*
B5.6-1941 R1949	Jig Bushings	.50
B5.7-1948	Circular and Dovetail Forming Tool Blanks	.75
B5.8-1954	★Chucks and Chuck Jaws	*In press*
B5.9-1948	Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes	.85
B5.10-1953	Machine Tapers, Self-Holding and Steep Taper Series	1.00
B5.11-1937	Adjustable Adapters for Multiple Spindle Drilling Heads	.60
B5.12-1950	Twist Drills, Straight Shank and Taper Shank	.75
B5.14-1949	Reamers	1.50
B5.15-1950	Involute Splines, Side Bearing	2.00
B5.16-1952	Accuracy of Engine and Tool Room Lathes	1.00
B5.17-1949 R1953	Markings for Grinding Wheels and Other Bonded Abrasives	.50
B5.18-1953	Spindle Noses and Arbors for Milling Machines	1.00
B5.19-1946 R1953	Life Tests of Single-Point Tools Made of Materials Other Than Sintered Carbides	.55
B5.20-1947	Machine Pins	.50
B5.21-1949	Straight Cut-Off Blades for Lathes and Screw Machines	.50
B5.22-1950	Single-Point Tools and Tool Posts	1.25
B5.25-1950	Punch and Die Sets for Two-Post Punch Press Tools	.75
B5.26-1950	Involute Serrations	1.00
B5.27-1951	Drill Drivers, Split-Sleeve, Collet-Type	.50
B5.28-1952	Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools	1.00
B5.30-1953	★Knurling	1.00
B5.31-1953	★Involute Spline and Serration Gages and Gaging	1.25
B5.32-1953	★Surface Grinding Machines of the Reciprocating Table Type, Designation and Working Ranges of	*In press*
B5.33-1953	★Plain Cylindrical Grinding Machines, Designation and Working Ranges of	*In press*
B6.1-1932	Spur Gear Tooth Form	.55
B6.3-1949	Letter Symbols for Gear Engineering	.50
B6.6-1946	Gear Tolerances and Inspection	.80
B6.7-1950	20-Degree Involute Fine-Pitch System for Spur and Helical Gears	1.50
B6.8-1950	Fine-Pitch Straight Bevel Gears	1.00
B6.9-1950	Design for Fine-Pitch Worm Gearings	1.50
B6.10-1950	Gear Nomenclature, Terms, Definitions, and Illustrations	1.50
B6.11-1951	Inspection of Fine Pitch Gears	2.50
B7.1-1947	Use, Care, and Protection of Abrasive Wheels, Safety Code for the	.75
B8-1932	†Protection of Industrial Workers in Foundries, Safety Code for the	.35
B9.1-1953	★Mechanical Refrigeration, Safety Code for (ASRE Circular 15-R)	1.00
B11.1-1948	†Power Presses and Foot and Hand Presses, Safety Code for	1.25
B13-1924	Logging and Sawmill Safety Code (NBS Handbook H5)	*Out of print*
B15.1-1953	Mechanical Power-Transmission Apparatus, Safety Code for	1.00

		Price
B16 — Cast Iron Pipe Flanges and Flanged Fittings:		
B16b-1944 R1953	Cast-Iron Pipe Flanges and Flanged Fittings, Class 250	.55
B16b1-1931 R1952	Cast-Iron Pipe Flanges and Flanged Fittings (for 800 lb Hydraulic Pressure)	.50
B16b2-1931 R1952	Cast-Iron Pipe Flanges and Flanged Fittings (for Maximum WSP of 25 lb)	.50
B16.1-1948	Cast-Iron Pipe Flanges and Flanged Fittings, Class 125	.65
B16.3-1951	Malleable-Iron Screwed Fittings, 150 lb	1.00
B16.4-1949	Cast-Iron Screwed Fittings, 125 and 250 lb	.60
B16.5-1953	★Steel Pipe Flanges and Flanged Fittings (Revision of B16e-1939)	3.00
B16.9-1951	Steel Butt-Welding Fittings	.75
B16.10-1939 R1947	Face-to-Face Dimensions of Ferrous Flanged and Welding End Valves	.65
B16.11-1946 R1952	Steel Socket-Welding Fittings	.60
B16.12-1953	★Cast-Iron Screwed Drainage Fittings	1.00
B16.14-1949 R1953	Ferrous Plugs, Bushings and Locknuts with Pipe Threads	.50
B16.15-1947 R1952	Brass or Bronze Screwed Fittings, 125 lb	.65
B16.16-1948 R1952	Cast-Iron Flanges and Flanged Fittings for Refrigerant Piping, Class 300	.50
B16.17-1949	Brass or Bronze Screwed Fittings, 250 lb	.50
B16.18-1950	Cast-Brass Solder-Joint Fittings	.75
B16.19-1951	Malleable-Iron Screwed Fittings, 300 lb	.60
B16.20-1952	Ring-Joint Gaskets and Grooves for Steel Pipe Flanges	1.00
B16.21-1951	Nonmetallic Gaskets for Pipe Flanges	1.00
B16.22-1951	Wrought Copper and Bronze Solder Joint Fittings	.75
B16.23-1953	Cast-Brass Solder-Joint Drainage Fittings	1.00
B16.24-1953	Brass or Bronze Flanges and Flanged Fittings	1.00
B17c-1927 R1947	Design of Transmission Shafting, Code for	.90
B17f-1930 R1947	Woodruff Keys, Keyslots and Cutters	.50
B17.1-1943	Shafting and Stock Keys	*Under revision—Out of print*
B18 — Bolts and Nuts:		
B18a-1927	Replaced by B18.1-1953	
B18g-1929	Replaced by B18.1-1953	
B18.1-1953	★Small Solid Rivets	1.00
B18.2-1952	Square and Hexagon Bolts and Nuts	2.00
B18.3-1947	Socket Head Cap Screws and Socket Set Screws	*Under revision—Out of print*
B18.4-1950	Large Rivets (½ Inch Nominal Diameter and Larger)	1.00
B18.5-1952	Round Head Bolts	1.00
B18.6-1947	Slotted and Recessed Head Screws, Machine, Cap, Wood, Tapping and Slotted Headless Types	1.00
B18.8-1950	High-Strength High Temperature Internal Wrenching Bolts	.50
B18.9-1950	Plow Bolts	.55
B18.10-1952	Track Bolts and Nuts	1.00
B19-1938	Compressed Air Machinery and Equipment, Safety Code for	*Under revision—Out of print*
B20.1-1947	Conveyors, Cableways and Related Equipment, Safety Code for	.90
B24.1-1952	†Forging and Hot Metal Stamping, Safety Code for	1.00
B26-1925 R1947	Fire-Hose Couplings Screw Thread	.50
B27.1-1950	Lock Washers	.75
B27.2-1953	Plain Washers	1.00

		Price
B28.1-1949	†Mills and Calenders in the Rubber Industry, Safety Code for	1.00
B29.1-1950	Transmission Roller Chains and Sprocket Teeth (SAE SP-69)	3.00
B29.2-1950	Inverted Tooth (Silent) Chains and Sprocket Teeth (SAE SP-68)	2.00
B30.1-1943 R1952	Jacks, Safety Code for	.50
B30.2-1943 R1952	Cranes, Derricks, and Hoists, Safety Code for	1.80
B31.1-1951	Code for Pressure Piping, including Supplement, B31.1a-1953, and B31.1.8-1952, Gas Transmission and Distribution Piping Systems (Section 8) (B31.1a-1953 also sold separately $1.00) (B31.1.8-1952 also sold separately $1.25)	5.25

B36 — Iron and Steel Pipe:

B36.1-1950	Welded and Seamless Steel Pipe, Specifications for (ASTM A53-47)	*Under revision*
B36.2-1950	Welded Wrought-Iron Pipe, Specifications for (ASTM A72-45)	*Under revision*
B36.3-1950	Seamless Carbon-Steel Pipe for High-Temperature Service, Specifications for (ASTM A106-48T)	*Under revision*
B36.4-1942 R1950	Electric-Fusion-Welded Steel Pipe (sizes 30 in. and over), Specifications for (ASTM A134-42)	*Under revision*
B36.5-1950	Electric-Resistance-Welded Steel Pipe, Specifications for (ASTM A135-46)	*Under revision*
B36.9-1950	Electric-Fusion-Welded Steel Pipe (sizes 4 in. to but not including 30 in.), Specifications for (ASTM A139-46)	*Under revision*
B36.10-1950	Wrought-Steel and Wrought-Iron Pipe	.65
B36.11-1942 R1950	Electric-Fusion-Welded Steel Pipe for High-Temperature and High-Pressure Service, Specifications for (ASTM A155-42)	*Under revision*
B36.12-1945	Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes, Specifications for (ASTM A83-44)	*Under-revision*
B36.13-1945	Electric-Resistance-Welded Steel and Open-Hearth Iron Boiler Tubes, Specifications for (ASTM A178-44)	*Under revision*
B36.14-1945	Seamless Steel Boiler Tubes for High-Pressure Service, Specifications for (ASTM A192-44)	*Under revision*
B36.15-1945	Medium-Carbon Seamless Steel Boiler and Superheater Tubes, Specifications for (ASTM A210-44)	*Under revision*
B36.16-1945 R1950	Spiral-Welded Steel or Iron Pipe, Specifications for (ASTM A211-44)	.25
B36.17-1945	Seamless Alloy-Steel Boiler and Superheater Tubes, Specifications for (ASTM A213-44)	*Under revision*
B36.18-1945	Electric-Resistance-Welded Steel Boiler and Superheater Tubes for High-Pressure Service, Specifications for (ASTM A226-44)	*Under revision*
B36.19-1952	Stainless Steel Pipe	1.00
B36.20-1951	Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses, Specifications for (ASTM A120-47)	.25
B36.21-1950	Seamless Alloy-Steel Pipe for High-Temperature Service, Specifications for (ASTM A158-49T)	*Under revision*
B36.22-1950	Seamless Carbon-Molybdenum Alloy-Steel Pipe for High-Temperature Service, Specifications for (ASTM A206-48T)	*Under revision*
B36.23-1950	Welded Alloyed Open-Hearth Iron Pipe, Specifications for (ASTM A253-47)	*Under revision*
B36.24-1950	Seamless Chromium-Molybdenum Alloy-Steel Pipe for Service at High Temperatures, Specifications for (ASTM A280-48T)	*Under revision*
B36.25-1950	Seamless 1 Percent Chromium, 0.5 Percent Molybdenum Alloy-Steel Pipe for Service at High Temperatures, Specifications for (ASTM A315-48T)	*Under revision*
B36.26-1950	Seamless and Welded Austenitic Stainless Steel Pipe, Specifications for (ASTM A312-48T)	*Under revision*

●

B38c1-1931	Domestic Refrigerators Using Ice, Code for Testing	*Under revision—Out of print*
B38.1-1944	†Food-Storage Volume and Shelf Area of Automatic Household Refrigerators, Method of Computing	.35
B38.2-1944	†Household Electric Refrigerators (Mechanically Operated), Test Procedures for	.50
B40.1-1939 R1947	Indicating Pressure and Vacuum Gages	.50
B45.1-1932	Foundry Patterns of Wood (CS19-32)	*Out of print*
B46.1-1947	Surface Roughness, Waviness, and Lay	.50
B46.2-1952	Surface Roughness and Lay, Physical Specimens of	1.00

How to Check Quality of Surface Finish.....$ .50

What does "roughness" mean? What grade of finish is suitable for your job? How are surface finish comparison specimens used? How does the "gold standard" surface specimen differ from regular standard specimens? In this reprint three outstanding experts answer these questions and tell the "why" and the "how" of the American Standards on surface roughness, B46.1-1947 and B46.2-1952. The articles are "The 'Why' of the Surface Finish Standards," by James A. Broadston; "The Use of Standard Roughness Comparison Specimens," by Donald E. Williamson; "The 'Gold Standard' Precision Specimens of Surface Roughness," by C. R. Lewis. Reprinted from STANDARDIZATION, August, 1952.

B47.1-1941	Gage Blanks (CS8-41)	*Under revision*
B48.1-1933 R1947	†Inch-Millimeter Conversion for Industrial Use	.50
B49.1-1947	Shaft Couplings, Integrally Forged Flange Type for Hydro-Electric Units	.50
B56.1-1950	Industrial Power Trucks, Safety Code for	.85
B57.1-1953	Compressed Gas Cylinder Valve Outlet and Inlet Connections (CGA V-1)	1.50
B59.1-1950	Mechanical Refrigeration Installations on Shipboard (ASRE 26)	1.00
B60.1-1950	Refrigerant Expansion Valves, Method of Rating and Testing (ASRE 17-R)	.50

C — Electrical Engineering

(Special price of series, including abbreviation and symbol standards, $65.00)

C1-1953	National Electrical Code (NBFU 70; Pocket edition)	.10
	(Paper-bound NFPA 70; 4¼ x 7¼ in., 576 pages	$1.00)
	(Cloth-bound NFPA 70; 6 x 9 in., 576 pages	$3.00)

		Price
C2 — National Electrical Safety Code (NBS Handbook H30):		
C2.1-1941 R1947	Installation and Maintenance of Electrical Supply Stations, Safety Rules for the (NBS Handbook H31) (Also sold separately 10¢)	1.75
C2.2-1941 R1947	Installation and Maintenance of Electric Supply and Communication Lines, Safety Rules for the (NBS Handbook H32) (Not sold separately)	
C2.3-1941 R1947	Installation and Maintenance of Electric Utilization Equipment, Safety Rules for the (NBS Handbook H33) (Not sold separately)	
C2.4-1939 R1947	Operation of Electric Equipment and Lines, Safety Rules for the (NBS Handbook H34) (Also sold separately 20¢)	
C2.5-1940 R1947	Radio Installations, Safety Rules for (NBS Handbook H35) (Also sold separately 15¢)	
C5 — Protection against Lightning, Code for (NBS Handbook H46; NFPA 78):		
C5.1-1953	Part I, Protection of Persons	.40
C5.2-1953	Part II, Protection of Buildings and Miscellaneous Property	
C5.3-1953	Part III, Protection of Structures Containing Flammable Liquids and Gases	
C6.1-1944	Terminal Markings for Electrical Apparatus	1.00
C7 — Bare Wire:		
C7.1-1953 2nd ed.	★Soft or Annealed Copper Wire, Specifications for (ASTM B3-53T)	.25
C7.2-1953 2nd ed.	★Hard-Drawn Copper Wire, Specifications for (ASTM B-53T)	.25
C7.3-1953	Medium-Hard-Drawn Copper Wire, Specifications for (ASTM B2-52)	.25
C7.4-1953 2nd ed.	★Tinned Soft or Annealed Copper Wire for Electrical Purposes, Specification for (ASTM B33-53T)	.25
C7.5-1953 2nd ed.	★Bronze Trolley Wire, Specifications for (ASTM B9-53)	.25
C7.6-1953	★Copper Trolley Wire, Specifications for (ASTM B47-52)	.25
C7.7-1953	Hot-Rolled Copper Rods for Electrical Purposes, Specifications for (ASTM B49-52)	.25
C7.8-1953 2nd ed.	★Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft, Specifications for (ASTM B8-53)	.25
C7.9-1953	Soft Rectangular and Square Bare Copper Wire for Electrical Conductors, Specifications for (ASTM B48-52)	.25
C7.10-1953 2nd ed.	★Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for (ASTM B105-53)	.25
C7.11-1953	Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for (ASTM B116-52)	.25
C7.12-1953 2nd ed.	★Rope-Lay Stranded Copper Conductors Having Bunch-Stranded Members, for Electrical Conductors, Specifications for (ASTM B172-53T)	.25
C7.13-1953 2nd ed.	★Rope-Lay Stranded Copper Conductors Having Concentric-Stranded Members, for Electrical Conductors, Specifications for (ASTM B173-53T)	.25
C7.14-1953 2nd ed.	★Bunch-Stranded Copper Conductors for Electrical Conductors, Specifications for (ASTM B174-53T)	.25
C7.15-1953 2nd ed.	★Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes, Specification for (ASTM B189-53T)	.25
C7.16-1953	Cored, Annular, Concentric-Lay-Stranded Copper Conductors, Specifications for (ASTM B226-52)	.25
C7.17-1953	Hard-Drawn Copper Covered Steel Wire, Specifications for (ASTM B227-52)	.25
C7.18-1953	Concentric-Lay-Stranded Copper Covered Steel Conductors, Specifications for (ASTM B228-52)	.25
C7.19-1953	Concentric-Lay-Stranded Copper and Copper Covered Steel Composite Conductors, Specifications for (ASTM B229-52)	.25
C7.20-1953 2nd ed.	★Hard-Drawn Aluminum Wire for Electrical Purposes, Specifications for (ASTM B230-53T)	.25
C7.21-1953 2nd ed.	★Concentric-Lay-Stranded Aluminum Conductors, Hard-Drawn, Specifications for (ASTM B231-53)	.25
C7.22-1953 2nd ed.	★Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced (ACSR), Specifications for (ASTM B232-53T)	.25
C7.23-1953	Rolled Aluminum Rods (EC Grade) for Electrical Purposes, Specifications for (ASTM B233-52)	.25
C7.24-1951	Resistivity of Electrical Conductor Materials, Method of Test for (ASTM B193-49)	.25
C7.25-1953	Copper Bus Bar, Rod, and Shapes, Specifications for (ASTM B187-52)	.25
C7.26-1953	Seamless Copper Bus Pipe and Tube, Specifications for (ASTM B188-52)	.25
C7.27-1953	Aluminum Bars for Electrical Purposes (Bus Bars), Specifications for (ASTM B236-52T)	.25
C7.28-1953	Standard Weight Zinc-Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced, Specifications for (ASTM B245-52T)	.25
C7.29-1953	★Determination of Cross-Sectional Area of Stranded Conductors, Method of	.25
C8 — Insulated Wire:		
C8.1-1944	Definitions and General Standards for Wire and Cables (AIEE 30-1944)	*Under revision—Out of print*
C8.5-1936	Replaced by C9.2-1953	
C8.6-1936	Replaced by C9.3-1953	
C8.7-1936	Replaced by C9.1-1953	
C8.9-1942	†Slow-Burning Wire and Cable, Specifications for	*Under revision—Out of print*
C8.10-1942	Impregnated Paper Insulation of Solid Type for Lead-Covered Power Cable	*Withdrawn*
C8.11-1936	†Code Rubber Insulation for Wire and Cable for General Purposes	*Withdrawn*
C8.12-1942	†Cotton Braid for Insulated Wire and Cable for General Purposes, Specifications for	*Under revision—Out of print*
C8.13-1948	Varnished Cambric Insulated Cables, Specification for (IPCEA S-2-1946)	1.00
C8.15-1942	†Metallic Coverings for Insulated Wire and Cable, Specifications for	*Under revision—out of print*
C8.16-1953	★†Rubber-Insulated Tree Wire, Specifications for	.50
C8.17-1954	★AO 30% Hevea Rubber Compound for Insulated Wire and Cable (ASTM D 27-52T) (Revision of C8.17-1936)	*In press*
C8.18-1948	†Weather-Resistant (Weatherproof) Wire and Cable (URC Type), Specifications for	.60

		Price
C8.19-1939	†Weather-Resistant Saturants and Finishes for Aerial Rubber Insulated Wire and Cable, Specifications for	.40
C8.20-1939	Replaced by C9.1-1953	
C8.22-1954	★Rubber Insulated Wire and Cable, Methods of Testing (ASTM D470-52T).....*In press*	
C8.23-1954	★Performance Synthetic Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D755-52T) .....*In press*	
C8.24-1954	★Heat-Resisting Synthetic Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D754-52T) *In press*	
C8.25-1954	★Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D532-49) .....*In press*	
C8.26-1954	★Performance Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D353-52T) .....*In press*	
C8.27-1954	★Heat-Resisting Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D469-52T) .....*In press*	
C8.28-1954	★GR-S Synthetic Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D866-46T) *In press*	
C8.29-1954	★Ozone-Resistant Type Insulation for Insulated Wire and Cable, Specifications for (ASTM D734-50T) .....*In press*	
C8.31-1954	★Sheath Compound for Electrical Insulated Cords and Cables Where Extreme Abrasion Resistance Is Not Required, Specifications for (ASTM D753-49) .....*In press*	
C8.32-1954	★GR-M Polychloroprene Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D752-49T) .....*In press*	
C8.33-1954	★Thermoplastic Vinyl Polymer Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D1047-49T) .....*In press*	
C8.34-1954	†Weather-Resistant Wire and Cable, Neoprene Type, Specifications for	.50
C9 — Magnet Wire:		
C9.1-1953	★†Enamel-Coated Round Copper Magnet Wire (NEMA MW1-1953) (Revision of C8.7-1936 and C8.20-1939)	.50
C9.2-1953	★†Cotton-Covered Round Copper Magnet Wire (NEMA MW11-1953) (Revision of C8.5-1936)	.35
C9.3-1953	★†Silk-Covered Round Copper Magnet Wire (NEMA MW21-1953) (Revision of C8.6-1936)	.35
C9.4-1953	★†Nylon-Fibre-Covered Round Copper Magnet Wire (NEMA MW22-1953)	.35
C12-1941	Electricity Meters, Code for, including Supplement C12a-1947 ..... (C12a-1947 sold separately....25¢)	2.00
C13-1926	Tubular Steel Poles for Electric Line Construction, Specifications for.....*Out of print*	
C16 — Radio:		
C16.4-1942	Loudspeaker Testing	.50
C16.5-1942	Volume Measurements of Electrical Speech and Program Waves *Under revision—Out of Print*	
C16.9-1943	†Power and Audio Transformers and Reactors (Home Receiver Replacement Type) (American War Standard)	.35
C16.11-1949	†Antennas, Methods of Testing (48 (IRE 2.S2)	.75
C16.12-1949	†Frequency Modulation Broadcast Receivers, Methods of Testing (47 IRE 17.S1), with Supplement, C16.12a-1951, Effects of Mistuning and Downward Modulation, Methods of Testing for (49 IRE 17.S1)..	1.25
C16.13-1949	†Television Receivers (Monochrome Service, 6-Megacycle Channel), Methods of Testing (48 IRE 22.S1)	1.00
C16.14-1949	†Color Codes: Numerical Values, Decimal Multipliers and Tolerances for Components for Electronic Equipment (RMA GEN-101)	.35
C16.15-1949	†Components for Electronic Equipment, Preferred Values for (RMA GEN-102)..	.35
C16.16-1949	†Vibrating Interrupters and Rectifiers for Auto Radios (Frequency 115 Cycles) (RMA REC-113)	.35
C16.17-1951	†Piezoelectric Crystals, Terminology for (49 IRE 14.S1)	.80
C16.18-1951	†Vehicular Communications Receivers, Methods of Testing (49 IRE 16.S1)	.50
C16.19-1951	†Amplitude-Modulation Broadcast Receivers, Methods of Testing (48 IRE 17.S1)..	1.00
C16.20-1951	†Television Signal Levels, Resolution, and Timing of Video Switching Systems, Methods of Measurement of (50 IRE 23.S1)	.75
C18-1947	Dry Cells and Batteries, Specifications for (NBS Circular C466)	.10
C19.1-1943	Industrial Control Apparatus (AIEE 15-1944) .....*Under revision—Out of print*	
C29.1-1944	†Insulator Tests (AIEE 41-1944)	.80
C33.1-1953	Flexible Cord and Fixture Wire *Under revision—Out of print*	
C34.1-1949	Pool Cathode Mercury-Arc Power Converters	1.20
C35.1-1943	Rotating Electrical Machinery on Railway Locomotives and Rail Cars and Trolley, Gasoline-Electric and Oil-Electric Coaches (AIEE 11-1943)..*Under revision—Out of print*	
C37 — Circuit Breakers:		
C37.1-1950	†Relays Associated with Electric Power Apparatus	.60
C37.2-1945	†Automatic Station Control, Supervisory, and Telemetering Equipments	.60
C37.4-1953	★†Alternating-Current Power Circuit Breakers (Also sold separately.....60¢)	$3.25
C37.5-1953	★†Rms Value of a Sinusoidal Current Wave and a Normal-Frequency Recovery Voltage, Methods for Determining the .... (Also sold separately.....60¢)	
C37.6-1953	★†Preferred Ratings for Power Circuit Breakers, Schedules of ..... (Also sold separately.....40¢)	
C37.7-1952	†Interrupting Rating Factors for Reclosing Service Power Circuit Breakers ..... (Also sold separately.....30¢)	
C37.8-1952	†Rated Control Voltages and Their Ranges, for Power Circuit Breakers ..... (Also sold separately.....30¢)	
C37.9-1953	★†Test Code for Power Circuit Breakers... (Also sold separately.....60¢)	
C37.12-1952	†Guide Specifications for Alternating-Current Power Circuit Breakers ..... (Also sold separately.....60¢)	
C39.1-1951	†Electrical Indicating Instruments	1.60
C39.2-1953	★†Direct-Acting Electrical Recording Instruments (Switchboard and Portable Types)	.75
C39.3-1948	†Shock-Testing Mechanism for Electrical Indicating Instruments, Specifications for	.50

		Price
C40-1928	Storage Batteries (AIEE 36-1928) *Under revision—Out of print*	
C42-1941	Definitions of Electrical Terms *Under revision—Out of print*	
C48-1931	Electric Railway Control Apparatus, Standards for (AIEE 16-1933)	.60
C50-1943	†Rotating Electrical Machinery	1.75
C52.3-1945	†Straight and Offset Resistance-Welding Electrodes and Electrode Holders (American War Standard)	.50
C52.4-1945	†Controls for Resistance-Welding Machines (American War Standard)	.35
C52.5-1945	†Specifications for Resistance-Welding Machines (American War Standard)	.75
C55.1-1951	Capacitors, Standards for (AIEE 18-1951)	.40

C57 — Transformers, Regulators, and Reactors:

C57.10-1953	†Transformers, Regulators and Reactors, Terminology for (Revision sheet, gratis)	
C57.11-1953	†Transformers, Regulators, and Reactors, General Requirements for (Revision sheet, gratis)	
C57.12-1949	†Distribution, Power, and Regulating Transformers, and Reactors other than Current-Limiting Reactors	
C57.12a-1954	★†Transformers — 67,000 Volts and below; 501 through 10,000 Kva, 3 Phase; 501 through 5,000 Kva, 1 Phase, Requirements for (Also sold separately.....$1.00)	
C57.13-1953	†Instrument Transformers, Requirements for (Also sold separately.....$1.00)	
C57.14-1948	†Constant-Current Transformers of the Moving-Coil Type	
C57.15-1949	†Step-Voltage and Induction-Voltage Regulators (Also sold separately.....50¢)	
C57.16-1948	†Current-Limiting Reactors	
C57.17-1948	†General-Purpose Specialty Transformers	
C57.18-1948	†Rectifier Transformer Equipment	5.00
C57.22-1948	†Distribution, Power, and Regulating Transformers, Test Code for	
C57.23-1948	†Instrument Transformers, Test Code for	
C57.25-1949	†Step-Voltage and Induction-Voltage Regulators, Test Code for (Also sold separately.....50¢)	
C57.28-1948	†Rectifier Transformer Equipment, Test Code for	
*C57.31-1938	†Operation of Transformers, Regulators, and Reactors at Altitudes Greater than 3300 Feet (1000 Meters), Guide for	
*C57.32-1948	†Loading Oil-Immersed Distribution and Power Transformers, Guide for (Also sold separately.....50¢)	
*C57.33-1953	†Loading and Operation of Instrument Transformers, Guide for (Also sold separately.....35¢)	
*C57.34-1948	†Loading Pole-Type Constant-Current Transformers, Guide for	
*C57.35-1948	†Loading Step-Voltage and Induction-Voltage Regulators, Guide for	
*C57.36-1948	†Loading Current-Limiting Reactors, Guide for	
C57.19	Distribution Transformers, Conventional Subway Type (EEI 51-3; NEMA 113-1951) (Proposed; distributed for trial and study)	.60
C57.20	Distribution Transformers, Overhead Type (EEI 53-1; NEMA 114-1953) (Proposed; distributed for trial and study)	1.00

*Withdrawn; in accordance with ASA C57 Committee action, officially approved by ASA on August 20, 1953, the words "American Standard" were removed from the titles of the guides. They now have the status of an appendix to the C57 standards as a source of engineering information.

C59 — Electrical Insulation Materials:

C59.1-1954	★Testing Molded Materials Used for Electrical Insulation, Methods of (ASTM D48-52T)	*In press*
C59.2-1944	Testing Electrical Insulating Oils, Method of (ASTM D117-43)	*Under revision*
C59.3-1954	★Insulation Resistance of Electrical Insulating Materials, Methods of Test for (ASTM D257-52T)	*In press*
C59.4-1935 R1945	Rubber Matting for Use Around Electrical Apparatus (Voltage Rating of Matting, 3000 Volts), Specifications for (ASTM D178-24)	.25
C59.6-1952	Rubber Insulating Tape, Specifications for (ASTM D119-48T)	.25
C59.10-1941 R1954	Testing Molding Powders Used in Manufacturing Molded Electrical Insulators, Methods of (ASTM D392-38)	.25
C59.11-1948 R1954	Impact Resistance of Plastics and Electrical Insulating Materials, Methods of Test for (ASTM D256-47T)	.25
C59.13-1951	Testing Sheet and Plate Materials Used in Electrical Insulation, Methods of (ASTM D229-49)	.25
C59.14-1954	★Testing Laminated Tubes Used in Electrical Insulation, Methods of (ASTM D348-52)	*In press*
C59.15-1954	Testing Laminated Round Rods Used in Electrical Insulation, Methods of (ASTM D349-52)	*In press*
C59.16-1952	Laminated Thermosetting Products (NEMA LP1-1951)	1.00
C59.17-1949	Fabricating Laminated Plastics, Practice for (NEMA 45-107)	.25
C59.18-1954	★Testing Shellac Used for Electrical Insulation, Methods of (ASTM D411-53)	*In press*
C59.19-1952	Dielectric Strength of Insulating Oils of Petroleum Origin, Method of Test for (ASTM D877-49)	.25
C59.20-1952	Vulcanized Fibre (NEMA Vul-1949)	*Under revision*
C59.21-1951	Sampling Electrical Insulating Oils, Method for (ASTM D923-49)	.25
C59.22-1951	Power Factor and Dielectric Constant of Electrical Insulating Oils of Petroleum Origin, Method of Test for (ASTM D924-49)	.25
C59.23-1951	Gas Content of Insulating Oils, Methods of Test for (ASTM D831-48)	.25
C59.24-1951	Inorganic Chlorides and Sulfates in Insulating Oils, Method of Test for (ASTM D878-49)	.25
C59.25-1951	Detection of Free Sulphur in Electrical Insulating Oils, Method of Test for (ASTM D989-48T)	*Under revision*
C59.26-1954	★Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, Specifications for (ASTM D748-52T)	*In press*

C60 — Electron Tubes:

C60.1-1952	†Electron Tube Bases, Caps, and Terminals (RTMA ET-103-B; NEMA 500-B)	1.50
C60.2-1953	★†Electron Tubes, Dimensional Characteristics of (RTMA ET-105-A; NEMA 502-A)	.80
C60.3-1949	†Gaskets for Water-Cooled Transmitting Tubes, Dimensional Characteristics of (RTMA ET-104-A; NEMA 501-A) *Withdrawn*	

		Price
C60.4-1950	†Designation System for Metal Electron Tube Shells (RTMA ET-112; NEMA 508)	.35
C60.5-1952	Electron Tubes, Methods of Testing (50 IRE 7.S2)	1.25
C60.6-1952	Direct Interelectrode Capacitance, Measurement of (RTMA ET-109-A; NEMA 505-A)	.80
C60.7-1952	Gages for Electron Tube Bases (RTMA ET-106-A; NEMA 503-A)	.80
C60.8-1952	Interelement Capacitances, Rating Values of (RTMA ET-114; NEMA 510)	.15
C62.1-1944	Lightning Arresters for Alternating-Current Power Circuits (AIEE 28-1944)	*Under revision—Out of print*
C63.1-1946	†Radio Interference of Electrical Components and Completed Assemblies of Electrical Equipment for the Armed Forces from 150 Kilocycles to 20 Megacycles, Method of Measuring (American War Standard) (JAN-I-225)	*Gratis*
C63.2	Radio Noise Meter, 0.015 to 25 Megacycles/Second, Specifications for (RMA 32-A; NEMA 102-1950) (Proposed American Standard; published for trial and criticism)	.65
C63.3	Radio Noise and Field Intensity Meters, 20 to 1000 Megacycles/Second, Specifications for (NEMA 131-1952; RTMA 41) (Proposed American Standard; published for trial and criticism)	.60
C64.1-1950	Brushes for Electrical Machines (NEMA CB1-1951)	1.50
C65.1-1952	Power-Operated Radio Receiving Appliances	.25
C67.1-1951	†Preferred Nominal Voltages, 100 Volts and Under	.25
C68.1-1953	★Measurement of Test Voltage in Dielectric Tests (AIEE 4-1953)	.80
C70.1-1953	★Household Automatic Electric Flatirons (NEMA DA1-1954)	1.00
C71.1-1950	Household Electric Ranges (NEMA ER1-1950)	.90
C72.1-1949	Household Automatic Electric Storage-Type Water Heaters (NEMA WH1-1949)	.90
C73-1941 R1946	Attachment Plugs and Receptacles, with supplement C73a-1953 (NEMA WD2-1953) (†C73a-1953 sold separately.....50¢)	.75
C74-1942	†Machine Tool Electrical Standards (American War Standard)	*Out of print*
C76.1-1943	Apparatus Bushings and Test Code for Apparatus Bushings (AIEE 21-1942)	.60
C77.1-1943 R1953	Wet Tests (AIEE 29-1941)	.40

C78 — Incandescent Lamps:

(Special price of series including PH22.84-1953 and Z22.85-1953, with binder, $8.00; without binder, $6.00)

		Price
C78.100-1953	★†General Service for 115-, 120-, and 125-Volt Circuits	.25
C78.101-1949	†General Service for 230- and 250-Volt Circuits	.25
C78.102-1949	†Train, Locomotive, and Country Home Service 30-34 and 60-64 Volts	.25
C78.103-1949	†Street Railway Service	.25
C78.105-1949	†Spotlight and Floodlight Service 115, 120, and 125 Volts	.25
C78.106-1953	★†Infrared Lamps for 115-125 Volt Service	.25
C78.107-1953	★†Projector and Reflector Spotlight and Floodlight Lamps 115, 120, and 125 Volts	.25
C78.109-1949	†Street Series Service	.25
C78.140-1953	★†Miniature Incandescent Lamps	.25
C78.200-1949	†S-6 Bulb, Candelabra Screw Base and C-7 Bulb, Candelabra Screw Base	.25
C78.201-1949	†S-11 Bulb, Medium Screw Base	.25
C78.202-1949	†S-11 Bulb, Intermediate Screw Base	.25
C78.203-1949	†S-14 Bulb, Medium Screw Base	.25
C78.204-1949	†A-15 Bulb, Medium Screw Base	.25
C78.205-1949	†A-17 Bulb, Medium Screw Base	.25
C78.206-1949	†A-19 Bulb, Medium Screw Base (Overall Length: Max $3\frac{1}{8}$ Inches, Min $3\frac{5}{16}$ Inches)	.25
C78.207-1949	†T-6½ Bulb, Intermediate Screw Base	.25
C78.208-1949	†T-10 Bulb, Medium Screw Base	.25
C78.209-1949	†T-10 Reflector Bulb, Medium Screw Base	.25
C78.210-1949	†A-19 Bulb, Medium Screw Base (Overall Length: Max $4\frac{1}{4}$ Inches, Min $3\frac{7}{8}$ Inches)	.25
C78.211-1949	†A-19 Bulb, Medium Screw Base (Overall Length: Max $4\frac{7}{16}$ Inches, Min $4\frac{1}{16}$ Inches)	.25
C78.212-1949	†T-8 Bulb, Medium Screw Base	.25
C78.213-1949	†PS-25 Bulb, Three-Contact Medium Screw Base	.25
C78.214-1949	†PS-25 Bulb, Three-Contact Mogul Screw Base	.25
C78.215-1949	†A-21 Bulb, Medium Screw Base (Overall Length: Max $4\frac{7}{8}$ Inches, Min $4\frac{1}{4}$ Inches)	.25
C78.216-1949	†A-21 Bulb, Medium Screw Base (Overall Length: Max $5\frac{5}{16}$ Inches, Min $4\frac{15}{16}$ Inches)	.25
C78.217-1949	†A-21 Bulb, Medium Screw Base (Overall Length: Max $4\frac{15}{16}$ Inches, Min $4\frac{5}{16}$ Inches)	.25
C78.218-1949	†A-23 Bulb, Medium Screw Base	.25
C78.219-1949	†G-30 Bulb, Three-Contact Mogul Screw Base	.25
C78.220-1949	†PS-25 Bulb, Medium Screw Base	.25
C78.221-1949	†PS-30 Bulb, Medium Screw Base	.25
C78.223-1949	†PS-35 Bulb, Mogul Screw Base	.25
C78.224-1949	†PS-40 Bulb, Mogul Screw Base	.25
C78.225-1949	†PS-52 Bulb, Mogul Screw Base	.25
C78.226-1949	†P-25 Bulb, Medium Screw Base	.25
C78.233-1949	†G-30 Bulb, Medium Screw Base	.25
C78.234-1949	†G-40 Bulb, Mogul Screw Base (Overall Length: Max $7\frac{1}{16}$ Inches, Min 6½ Inches)	.25
C78.235-1949	†G-40 Bulb, Mogul Screw Base (Overall Length: Max 8 Inches, Min $7\frac{7}{16}$ Inches)	.25
C78.236-1949	†R-40 Bulb, Medium Skirted Screw Base	.25
C78.237-1949	†R-40 Bulb, Medium Screw Base	.25
C78.238-1949	†PAR-38 Bulb, Medium Skirted Screw Base	.25
C78.245-1949	†PS-25 Bulb, Mogul Screw Base	.25
C78.248-1949	†T-64 Bulb, Mogul Bipost Base	.25
C78.249-1949	†G-30 Bulb, Medium Skirted Screw Base	.25
C78.251-1953	★†R-30 Bulb Medium Screw Base	.25

C78 — Electric Discharge Lamps, Dimensional and Electrical Characteristics of:

(Special price of series with binder, $5.00; without binder, $3.00)

		Price
C78.400-1951	†4-Watt T-5 Pre-heat Start	.25
C78.401-1951	†6-Watt T-5 Pre-heat Start	.25
C78.402-1951	†8-Watt T-5 Pre-heat Start	.25
C78.403-1951	†14-Watt T-12 Pre-heat Start	.25
C78.404-1951	†15-Watt T-8 Pre-heat Start	.25
C78.405-1951	†15-Watt T-12 Pre-heat Start	.25
C78.406-1951	†20-Watt T-12 Pre-heat Start	.25
C78.407-1951	†30-Watt T-8 Pre-heat Start	.25
C78.408-1951	†40-Watt T-12 Pre-heat Start	.25
C78.409-1951	†85-Watt T-17 Pre-heat Start	.25
C78.410-1951	†100-Watt T-17 Pre-heat Start	.25
C78.413-1951	†32-Watt T-10 12-Inch Circular Pre-heat Start	.25
C78.600-1951	†40-Watt T-12 Instant-Start	.25

		Price
C78.601-1951	†40-Watt T-17 Instant-Start	.25
C78.801-1951	†42-Inch T-6 Instant-Start Single-Pin Hot-Cathode	.25
C78.803-1951	†64-Inch T-6 Instant-Start Single-Pin Hot-Cathode	.25
C78.805-1951	†72-Inch T-8 Instant-Start Single-Pin Hot-Cathode	.25
C78.807-1951	†96-Inch T-8 Instant-Start Single-Pin Hot-Cathode	.25
C78.808-1951	†48-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.809-1951	†72-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.810-1951	†96-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.1100-1951	†20-Millimeter 52-Inch Cold-Cathode	.25
C78.1101-1951	†20-Millimeter 64-Inch Cold-Cathode	.25
C78.1102-1951	†20-Millimeter 76-Inch Cold-Cathode	.25
C78.1103-1951	†20-Millimeter 84-Inch Cold-Cathode	.25
C78.1104-1951	†25-Millimeter 93-Inch Cold-Cathode	.25
C78.1105-1951	†20-Millimeter 93-Inch Cold-Cathode	.25
C78.1200-1951	†8-Watt T-5 Bactericidal Lamp	.25
C78.1201-1951	†15-Watt T-8 Bactericidal Lamp	.25
C78.1202-1951	†30-Watt T-8 Bactericidal Lamp	.25

C78 — Fluorescent Lamp Auxiliaries (*see also* Fluorescent Lamp Ballasts, C82):

C78.180	†Fluorescent Lamp Starters, Specifications for (Proposed American Standard; published for trial and criticism)	.35
C78.181	†Fluorescent Lamp Starters, Method of Testing (Proposed American Standard; published for trial and criticism)	.35
C79.1-1948	†Glass Bulbs Intended for Use with Electron Tubes and Electric Lamps, Nomenclature for	.50
C79.2-1948	†Molded Glass Flares Intended for Use with Electron Tubes and Electric Lamps, Nomenclature for	.25

C80 — Conduit:

C80.1-1953	★†Rigid Steel Conduit, Zinc Coated, Specification for (NEMA 110-1953)	.50
C80.2-1953	★†Rigid Steel Conduit, Enameled, Specification for (NEMA 111-1953)	.35
C80.3-1950	†Electrical Metallic Tubing, Zinc Coated, Specification for (NEMA 112-1950)	.35
C81.1-1951	†Rolled Threads for Screw Shells of Electric Lamp Holders and for Screw Shells of Unassembled Lamp Bases, Dimensions for	.35

C82 — Fluorescent Lamp Ballasts:

C82.1	†Fluorescent Lamp Ballasts, Specification for (Proposed American Standard; published for trial and criticism, April, 1953)	.35
C82.2	†Fluorescent Lamp Ballasts, Method of Measurement of (Proposed American Standard; published for trial and criticism)	.50
C82.3	†Fluorescent Lamp Reference Ballasts, Specification for (Proposed American Standard; published for trial and criticism)	.35

For standard abbreviations and symbols in electrical engineering, see Y, Drawings and Symbols.

D — Automotive

D6.1-1948	Uniform Traffic Control Devices for Streets and Highways, Manual on	.75
D7.1-1941	†Inspection Requirements for Motor Vehicles	*Under revision—Out of print*
D8.1-1951	Railroad Highway Grade Crossing Protection (AAR Bulletin 3)	.50
D10.1-1951	Adjustable Face Traffic Control Signal Head Standards (ITE Technical Report 1)	.50
D11.1-1943	Pre-Timed, Fixed Cycle, Traffic Signal Controllers (ITE Technical Report 2)	.50
D12.1-1953	Street and Highway Lighting	.50
D13.1-1950	Traffic-Actuated, Traffic Signal Controllers and Detectors, Specifications for	.50

G — Ferrous Materials and Metallurgy

G8.1-1947	Zinc (Hot-Galvanized) Coatings on Structural Steel Shapes, Plates and Bars, and Their Products, Specifications for (ASTM A123-47; AASHO M111-35)	.25
G8.2-1951	Zinc-Coated (Galvanized) Iron or Steel Sheets, Specifications for (ASTM A93-50T)	.25
G8.3-1944	Zinc-Coated (Galvanized) Iron or Steel Telephone and Telegraph Line Wire, Specifications for (ASTM A111-43)	*Under revision*
G8.4-1935	Zinc-Coated (Galvanized) Iron or Steel Tie Wires, Specifications for (ASTM A112-33)	.25
G8.5-1935	Zinc-Coated Iron or Steel Chain-Link Fence Fabric Galvanized After Weaving, Specifications for (ASTM A117-33)	.25
G8.6-1943	Zinc-Coated Steel Wire Strand, "Galvanized" and Class A ("Extra Galvanized"), Specifications for (ASTM A122-41)	*Under revision*
G8.8-1937	Zinc-Coated (Galvanized) Wrought Iron Sheets, Specifications for (ASTM A163-36)	*Under revision*
G8.9-1948	Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing, Specifications for (ASTM A116-48)	.25
G8.10-1948	Zinc-Coated (Galvanized) Iron or Steel Barbed Wire, Specifications for (ASTM A121-48)	.25
G8.11-1944	Zinc-Coated Steel Wire Strand (Class B and Class C Coatings), Specifications for (ASTM A218-41)	.25
G9.1-1933	Carbon-Steel and Alloy-Steel Blooms, Billet for (ASTM A17-29)	*Under revision*
G12-1936	Refined Iron Bars, Specifications for (ASTM A41-36)	.25
G17.1-1944	Carbon-Steel Castings for Valves, Flanges, and Fittings for High-Temperature Service, Specifications for (ASTM A95-44)	.25
G17.2-1944	Alloy-Steel Bolting Material for High-Temperature Service, Specifications for (ASTM A96-44)	*Under revision*
G17.3-1947	Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for (ASTM A105-46)	.25
G20-1939	Mild Steel Plates, Specifications for (ASTM A10-39)	*Under revision*
G21-1939	Structural Rivet Steel, Specifications for (ASTM A141-39)	*Under revision*
G23-1939	Uncoated Wrought-Iron Sheets, Specifications for (ASTM A162-39)	.25
G24.1-1947	Steel for Bridges and Buildings, Specifications for (ASTM A7-46)	*Under revision*
G25.1-1948	Gray Iron Castings, Specifications for (ASTM A48-48; AASHO M105)	.25
G26.1-1942	Cast-Iron Culvert Pipe, Specifications for (ASTM A142-38)	.25

		Price
G27.1-1942	Lightweight and Thin-Sectioned Gray Iron Castings, Specifications for (ASTM A190-40)	*Under revision*
G28.1-1942	Boiler Rivet Steel and Rivets, Specifications for (ASTM A31-40)	*Under revision*
G29.1-1945	Carbon-Steel Plates for Stationary Boilers and Other Pressure Vessels, Specifications for (ASTM A70-44)	*Under revision*
G30.1-1943	Low Tensile Strength Carbon-Steel Plates of Flange and Firebox Qualities, Specifications for (ASTM A89-43)	*Under revision*
G31.1-1947	Carbon-Silicon Steel Plates of Ordinary Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for (ASTM A201-46)	*Under revision*
G32.1-1947	Chrome-Manganese-Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A202-46)	*Under revision*
G33.1-1945	Low-Carbon Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A203-44)	*Under revision*
G34.1-1947	Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A204-46)	*Under revision*
G35.1-1947	High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels (Plates 4½ in. and Under in Thickness), Specifications for (ASTM A212-46)	*Under revision*
G36.1-1944	Alloy-Steel Castings for Valves, Flanges, and Fittings for High-Temperature Service, Specifications for (ASTM A157-44)	*Under revision*
G37.1-1949	Forged or Rolled-Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for (ASTM A182-48T)	*Under revision*
G38.1-1952	Carbon and Alloy-Steel Nuts for Bolts for High-Pressure and High-Temperature Service, Specifications for (ASTM A194-51)	.25
G39.1-1947	Structural Steel for Locomotives and Cars, Specifications for (ASTM A-113-46)	*Under revision*
G40.1-1943	Low Tensile Strength Carbon-Steel Plates of Structural Quality for Welding, Specifications for (ASTM A78-43)	*Under revision*
G41.1-1947	Structural Silicon Steel, Specifications for (ASTM A94-39)	*Under revision*
G42.1-1942	High-Strength Structural Rivet Steel, Specifications for (ASTM A195-41)	*Under revision*
G43.1-1942	Axle-Steel Bars for Concrete Reinforcement, Specifications for (ASTM A160-39)	*Under revision*
G44.1-1942	Fabricated Steel Bar or Rod Mats for Concrete Reinforcement, Specifications for (ASTM A184-37)	.25
G45.1-1942	Welded Steel Wire Fabric for Concrete Reinforcement, Specifications for (ASTM A185-37; AASHO M55-37)	.25
G46.1-1947	Forged or Rolled Steel Pipe Flanges for General Service, Specifications for (ASTM A181-46)	*Under revision*
G48.1-1953	Malleable Iron Castings, Specifications for (ASTM A47-52; AASHO M106)	.25
G49.1-1948	Cupola Malleable Iron, Specifications for (ASTM A197-47)	.25
G50.1-1945	Carbon-Steel Castings for Miscellaneous Industrial Uses, Specifications for (ASTM A27-44)	*Under revision*
G51.1-1944	Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, Specifications for (ASTM A215-44)	*Under revision*
G52.1-1944	Alloy-Steel Castings for Structural Purposes, Specifications for (ASTM A148-44)	*Under revision*

H — Nonferrous Materials and Metallurgy

H7.1-1953 2nd ed.	★Copper and Copper-Base Alloy Forging Rod, Bar, and Shapes, Specifications for (ASTM B124-52)	.50
H8.1-1953 2nd ed.	★Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines, Specifications for (ASTM B16-52)	.50
H13-1925	Plumbago Crucibles for Non-Tilting Furnaces in Non-Ferrous Foundry Practice, Outside Dimensions of	.25
H17.1-1942	Lake Copper Wire Bars, Cakes, Slabs, Billets, Ingots, and Ingot Bars, Specifications for (ASTM B4-42)	.25
H17.2-1943	Electrolytic Copper Wire Bars, Cakes, Slabs, Billets, Ingots, and Ingot Bars, Specifications for (ASTM B5-43; AASHO M110-45)	.25
H23.1-1953	Seamless Copper Water Tube, Specifications for (ASTM B88-51)	.25
H24.1-1949	Slab Zinc (Spelter), Specifications for (ASTM B6-49; AASHO M120)	.25
H25.1-1943	Rolled Zinc, Specifications for (ASTM B69-39; AASHO M113-39)	.25
H26.1-1953 2nd ed.	★Seamless Copper Pipe, Standard Sizes, Specifications for (ASTM B42-52)	.50
H27.1-1953 2nd ed.	★Seamless Red Brass Pipe, Standard Sizes, Specifications for (ASTM B43-52)	.25
H28.1-1953	★Bronze Castings in the Rough for Locomotive Wearing Parts, Specifications for (ASTM B66-52; AAR M-503)	.25
H29.1-1953	★Car and Tender Journal Bearings, Lined, Specifications for (ASTM B67-52; AAR M-501)	.25
H30.1-1953	Copper-Silicon Alloy Wire for General Purposes, Specifications for (ASTM B99-51)	.25
H31.1-1953	★Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses, Specifications for (ASTM B100-52; AASHO M108)	.25
H32.1-1953 2nd ed.	★Brass Wire, Specifications for (ASTM B134-52)	.50
H33.1-1953 2nd ed.	★Leaded Red Brass (Hardware Bronze) Rod, Bar, and Shapes, Specifications for (ASTM B140-52)	.50

J — Rubber

J1.1-1953	★Sample Preparation for Physical Testing of Rubber Products, Methods of (ASTM D15-52T)	.25
J2.1-1953	★Tension Testing of Vulcanized Rubber, Methods of (ASTM D412-51T)	.25
J3.1-1942	Adhesion of Vulcanized Rubber (Friction Test), Methods of Test for (ASTM D413-39)	.25
J4.1-1953	★Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method, Method of Test for (ASTM D572-52)	*In press*
J5.1-1953	★Accelerated Aging of Vulcanized Rubber by the Oven Method, Method of Test for (ASTM D573-52)	*In press*

		Price
J6 — Specifications for Rubber Protective Equipment for Electrical Workers:		
J6.1-1950	Rubber Insulating Line Hose (ASTM D1050-49T)	.50
J6.2-1950	Rubber Insulator Hoods (ASTM D1049-49T)	
J6.4-1950	Rubber Insulating Blankets (ASTM D1048-49T)	
J6.5-1950	Rubber Insulating Sleeves (ASTM D1051-49T)	
J6.3-1945	†Leather Protective Gloves (American War Standard)	.25
J6.6-1952	Rubber Insulating Gloves, Specifications for (ASTM D120-52T)	.25

K — Chemical Industry

K5-1922	Alloys of Lead, Tin, Antimony and Copper, Methods of Chemical Analysis of (ASTM B18-36T)	*Under revision—Out of print*
K12-1921	Battery Assay of Copper, Methods of (ASTM B34-36T)	*Under revision*
K13.1-1950	†Identification of Gas-Mask Canisters, Safety Code for	.35
K15.1-1947	Chemical Analysis of White Pigments, Methods of (ASTM D34-47)	*Under revision*
K16.1-1944	Chemical Analysis of Dry Red Lead, Methods of (ASTM D49-44)	.25
K18.1-1948	Laboratory Sampling and Analysis of Coal and Coke, Methods of (ASTM D271-48)	.35
K20.1-1936	Cubic Foot Weight of Crushed Bituminous Coal, Method of Test for (ASTM D291-29)	.25
K20.2-1936	Cubic Foot Weight of Coke, Method of Test for (ASTM D292-29)	.25
K20.3-1951	Tumbler Test for Coke, Method of (ASTM D294-50)	.25
K20.4-1948	Drop Shatter Test for Coke, Method of (ASTM D141-48)	.25
K20.5-1936	Volume of Cell Space of Lump Coke, Method of Test for (ASTM D167-24)	.25
K21.1-1953	★Toluene Insoluble Solid Matter in Rosin (Chiefly Sand, Chips, Dirt and Bark), Method of Test for (ASTM D269-52)	.25
K22.1-1944	Zinc Oxide, Specifications for (ASTM D79-44)	.25
K23.1-1943	Basic-Carbonate White Lead, Specifications for (ASTM D81-43)	.25
K24-1941	Red Lead, Specifications for (ASTM D83-41)	.25
K25-1941	Mineral Iron Oxide, Specifications for (ASTM D84-41)	*Under revision*
K26.1-1947	Lampblack, Specifications for (ASTM D209-47)	.25
K27.1-1947	Chrome Yellow and Chrome Orange, Specifications for (ASTM D211-47)	.25
K28.1-1947	Reduced Chrome Green, Specifications for (ASTM D213-47)	.25
K29.1-1947	Iron Blue, Specifications for (ASTM D261-47; AASHO M131)	.25
K32.1-1953	Spirits of Turpentine, Specifications for (ASTM D13-51)	.25
K33-1937	Sampling and Testing Turpentine, Methods of (ASTM D233-36)	*Under revision*
K34.1-1949	Raw Linseed Oil, Specifications for (ASTM D234-48; AASHO M125-49)	.25
K35.1-1949	Boiled Linseed Oil, Specifications for (ASTM D260-48)	.25
K36.1-1947	Bone Black, Specifications for (ASTM D210-47)	.25
K37.1-1946	Chrome Oxide Green, Specifications for (ASTM D263-46)	.25
K41-1953	★Specific Gravity of Pigments, Methods of Test for (ASTM D153-52T)	*In press*
K42.1-1945	Coarse Particles in Pigments, Pastes, and Paints, Methods of Test for (ASTM D185-45)	.25
K44.1-1951	Yellow, Orange, Red and Brown Pigments Containing Iron and Manganese, Methods of Chemical Analysis of (ASTM D50-50)	.25
K45-1941	Titanium Dioxide Pigments, Specifications for (ASTM D476-41)	*Under revision*
K46-1940	Sampling Coal for Analysis, Method of (ASTM D21-40)	*Under revision*
K47.1-1945	Basic Sulfate White Lead, Specifications for (ASTM D82-44)	.25
K48-1941	Blue Lead; Basic Sulfate, Specifications for (ASTM D405-41)	.25
K49-1941	C. P. Para Red Toner, Specifications for (ASTM D475-41)	*Under revision*
K50.1-1949	Zinc Yellow (Zinc Chromate), Specifications for (ASTM D478-49)	.25
K51-1941	Alkalinity or Acidity of Pigments, Method of Test for (ASTM D278-31)	*Under revision*
K52-1941	Bleeding of Pigments, Methods of Test for (ASTM D279-31)	.25
K53-1941	Hydroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments, Method of Test for (ASTM D280-33)	.25
K54-1941	Oil Absorption of Pigments, Method of Test for (ASTM D281-31)	.25
K55-1941	Acetone Extract in Dry Lampblack and Dry Bone Black, Method of Test for (ASTM D305-31)	*Under revision*
K56-1941	Tinting Strength of White Pigments, Method of Test for (ASTM D332-36)	.25
K57-1953	★Mass Color and Tinting Strength of Color Pigments, Method of Test for (ASTM D387-52T)	*In press*
K58-1941	Chemical Analysis of Yellow and Orange Pigments Containing Chromium Compounds, Blue Pigments, and Chrome Green, Methods of (ASTM D126-36)	*Under revision*
K59-1941	Chemical Analysis of Dry Mercuric Oxide, Method of (ASTM D284-33)	.25
K60 — Soaps and Detergents:		
K60.1-1952	Chip Soap, Specifications for (ASTM D496-51)	.25
K60.2-1953	★Ordinary Laundry Bar Soap, Specifications for (ASTM D497-52)	.25
K60.3-1952	Powdered Soap (Nonalkaline Soap Powder), Specifications for (ASTM D498-51)	.25
K60.4-1949	White Floating Toilet Soap, Specifications for (ASTM D499-48)	.25
K60.5-1949	Alkaline Soap Powder, Specifications for (ASTM D534-42)	.25
K60.6-1949	Milled Toilet Soap, Specifications for ASTM D455-48)	.25
K60.7-1949	Built Soap, Powdered, Specifications for (ASTM D533-44)	.25
K60.8-1949	Compound Chip Soap (with Rosin), Specifications for (ASTM D690-48)	.25
K60.9-1949	Compound Powdered Soap (Granulated, with Rosin), Specifications for (ASTM D691-44)	.25
K60.10-1949	Caustic Soda, Specifications for (ASTM D456-39)	.25
K60.11-1949	Soda Ash, Specifications (ASTM D458-39)	.25
K60.12-1949	Trisodium Phosphate, Specifications for (ASTM D538-44)	.25

		Price
K60.13-1949	Salt-Water Soap, Specifications for (ASTM D593-42)	.25
K60.14-1952	Liquid Toilet Soap, Specifications for (ASTM D799-51)	.25
K60.15-1949	Olive Oil Chip Soap (Type A, Straight; Type B, Blended), Specifications for (ASTM D630-42)	.25
K60.16-1953	★Palm Oil Chip Soap (Type A, Straight; Type B, Blended), Specifications for (ASTM D536-52)	.25
K60.17-1949	Modified Soda (Sesquicarbonate Type), Specifications for (ASTM D457-39)	.25
K60.18-1949	Sodium Metasilicate, Specifications for (ASTM D537-41)	.25
K60.19-1949	Sodium Sesquisilicate, Specifications for (ASTM D594-41)	.25
K60.20-1949	Tetrasodium Pyrophosphate (Anhydrous), Specifications for (ASTM D595-45)	.25
K60.21-1950	Sampling and Chemical Analysis of Alkaline Detergents, Methods of (ASTM D501-49)	.25

L — Textile Industry

L1.1-1947	†Textile Safety Code	.50
L3.1-1941	Cotton Rubber-Lined Fire Hose for Public and Private Fire Department Use, Specifications for (ASTM D296-38) *Under revision*	
L4.1-1948	†Bleached Cotton Bed Sheets and Pillowcases, Specifications for	.25
L10-1936 R1945	Shrinkage in Laundering of Woven Cotton Cloth, Method of Test for (ASTM D437-36)	.25
L11.1-1941	†Body Sizes for Boys' Garments	.35

L12 — Definitions (including Tolerances) for Filling Materials for Bedding and Upholstery:

L12.1-1946	†Cotton	.50
L12.2-1946	†Wool	
L12.4-1946	†Miscellaneous	

●

L13.1-1942	Tubular Sleeving and Braids, Methods of Testing and Tolerances for (ASTM D354-41)	.25

L14 — Textile Test Methods:

L14.1-1949	†Accelerated Ageing of Textiles Dyed with Sulfur Colors (AATCC 26-44)	.25
L14.2-1949	†Colorfastness of Textiles to Acids and to Alkalies (AATCC 6-25)	.25
L14.3-1949	†Colorfastness of Wool Textiles to Carbonizing (AATCC 11-41)	.25
L14.4-1949	†Colorfastness of Silk to Degumming (AATCC 7-28)	.25
L14.5-1949	†Colorfastness of Textiles to Fulling (AATCC 13-32)	.25
L14.6-1949	†Colorfastness of Wool Textiles to Mill Washing and Scouring (AATCC 1-32)	.25
L14.7-1949	†Colorfastness of Silk to Peroxide Bleaching (AATCC 13-32)	.25
L14.8-1949	†Colorfastness of Textiles to Sea Water (AATCC 12-31)	.25
L14.9-1949	†Colorfastness of Textiles to Stoving (AATCC 9-28)	.25
L14.10-1949	†Test for Mercerization (AATCC 19-37)	.25
L14.11-1949	†Evaluation of Wetting Agents (AATCC 17-43)	.25
L14.12-1953	★Definition of Terms Relating to Textile Materials (ASTM D123-52) *In press*	
L14.13-1953	★Testing and Tolerances for Cotton Yarns, Methods of (ASTM D180-52T)	.25
L14.14-1949	Testing and Tolerances for Cotton Sewing Threads, Methods of (ASTM D204-42)	.25
L14.15-1949	Test for Osnaburg Cement Sacks, Methods of (ASTM D205-39)	.25
L14.16-1949	Testing and Tolerances for Woven Tapes, Methods of (ASTM D259-44)	.25
L14.17-1949	Testing and Tolerances for Certain Light and Medium Weight Cotton Fabrics, Methods of (ASTM D274-36)	.25
L14.18-1953	★Asbestos Yarns, Specifications and Methods of Test for (ASTM D299-52T)	.25
L14.19-1949	Determining Relative Humidity, Method of (ASTM D337-34)	.25
L14.20-1949	Holland Cloth, Methods of Test for (ASTM D376-35)	.25
L14.21-1949	Woolen Yarns, Specifications and Methods of Test for (ASTM D403-48T)	.25
L14.22-1949	Worsted Yarns, Specifications and Methods of Test for (ASTM D404-48T)	.25
L14.23-1951	Testing Cotton Fibers, General Methods of (ASTM D414-49T) *Under revision*	
L14.25-1949	Testing Pile Floor Covering, Methods of (ASTM D418-42)	.25
L14.26-1951	Fineness of Wool, Methods of Test for (ASTM D419-50T)	.25
L14.27-1949	Testing and Tolerances for Certain Carded Cotton Gray Goods, Methods of (ASTM D433-39)	.25
L14.28-1953	★Testing and Tolerances for Certain Wool and Part Wool Fabrics, Methods of (ASTM D462-52) *In press*	
L14.29-1951	Fineness of Wool Tops, Specifications and Methods of Test for (ASTM D472-50T)	.25
L14.30-1949	Testing and Tolerances for Spun Rayon and Estron Yarns and Threads, Methods of (ASTM D507-44)	.25
L14.31-1949	Testing and Tolerances for Yarns Spun from Mixed Fibers, Methods of (ASTM D508-43)	.25
L14.32-1951	Fiber Length of Wool, Method of Test for (ASTM D519-49)	.25
L14.33-1949	Testing Rayon and Estron Staple, Methods of (ASTM D540-44)	.25
L14.34-1953	★Testing and Tolerances for Single Jute Yarn, Methods of (ASTM D541-52)	.25
L14.35-1953	★Testing Woven Asbestos Cloth, Methods of (ASTM D577-52)	.25
L14.36-1951 2nd ed.	Testing and Tolerances for Glass Yarn, Methods of (ASTM D578-50T)	.25
L14.37-1951	Testing and Tolerances for Woven Glass Fabrics, Methods of (ASTM D579-49)	.25
L14.38-1951	Testing and Tolerances for Woven Glass Tapes, Methods of (ASTM D580-49)	.25
L14.39-1951	Testing and Tolerances for Woven Glass Tubular Sleeving and Braids, Methods of (ASTM D581-49)	.25
L14.40-1953	★Hard Scoured Wool in Wool in the Grease (Laboratory Scale Operations), Method of Test for (ASTM D584-52T) *In press*	
L14.41-1953	★Testing Asbestos Tubular Sleeving, Methods of (ASTM D628-52)	.25
L14.42-1949	Testing and Tolerances for Certain Fine Staple Cotton Gray Goods, Methods of (ASTM D679-44)	.25
L14.43-1949	Testing and Tolerances for Certain All-Cotton and Cotton and Rayon Fine Fancy Goods, Methods of (ASTM D680-44)	.25
L14.44-1953	★Testing and Tolerances for Jute Rove and Plied Yarn for Electrical and Packing Purposes, Methods of (ASTM D681-52)	.25

		Price
L14.45-1953	★Testing and Tolerances for Rope made from Bast and Leaf Fibers, Methods of (ASTM D738-52)	.25
L14.46-1953	★Testing and Tolerances for Spun, Twisted, or Braided Products Made from Flax, Hemp, Ramie, or Mixtures Thereof, Methods of (ASTM D739-52)	.25
L14.47-1949	Compatibility of Glass Yarn with Insulating Varnish, Method of Test for (ASTM D886-46T)	*Under revision*
L14.48-1953	★Designation of Linear Density of Fibers, Yarns, and Other Textile Materials in Universal Units, Practice for (ASTM D861-52)	.25
L14.49-1949	Test for Small Amounts of Copper and Manganese in Textiles, Method of (ASTM D377-52T)	.25
L14.50-1949	Cotton Goods for Rubber and Pyroxylin Coating, Specifications and Methods of Test for (ASTM D334-40)	.25
L14.51-1949	Air Permeability of Textile Fabrics, Methods of Test for (ASTM D737-46)	.25
L14.52-1953	★Testing Felt, Methods of (ASTM D461-51)	
L14.53-1951	†Colorfastness to Light (AATCC 16-45)	
L14.54-1951	†Colorfastness of Acetate Rayons to Atmospheric Fumes (AATCC 23-46)	
L14.55-1951	†Resistance of Textiles to Mildew and Rot, and Evaluation of Textile Fungicides (AATCC 30-46)	
L14.56-1951	†Colorfastness to Perspiration (AATCC 15-45)	
L14.57-1951	†Colorfastness to Chlorine Bleaching (AATCC 3-42)	
L14.58-1951	†Colorfastness to Peroxide Bleaching (AATCC 29-45)	
L14.59-1951	†Water Resistance of Fabrics — Resistance to Hydrostatic Pressure (AATCC 18-41)	
L14.60-1951	†Resistance to Water Spray (AATCC 22-41)	
L14.61-1951	†Resistance to Absorption of Water During Immersion (AATCC 21-41)	
L14.63-1951	†Colorfastness to Pleating (AATCC 31-46)	
L14.64-1951	†Resistance of Textile Fabrics and Yarns to Insect Pests (AATCC 24-49)	
L14.65-1951	†Evaluation of Insect Pest Deterrents on Textiles (AATCC 28-49)	
		Under Revision
L14.66-1951	Textile Testing Machines, Specifications for (ASTM D76-49)	.25
L14.67-1951	Testing and Tolerances for Knit Goods, Methods of (ASTM D231-46)	.25
L14.68-1951	Testing Woven Textile Fabrics, General Methods of (ASTM D39-49)	.25
L14.69-1952	†Flammability of Clothing Textiles, Test Method for (AATCC 33-52; ASTM D1230-52T)	.35

L17 — Specifications for Women's Industrial Clothing (American War Standards):

L17.1-1944	†Bungalow Aprons, and Wrap-around and Coat Style Dresses	.50
L17.2-1944	†Slacks, Dungarees, Overalls, and Coveralls	.50
L17.3-1944	†Jackets, Shirts, and Aprons	.50
L17.4-1944	†Regular and Princess Model Coat Style Dresses	.35

L18 — Specifications for Protective Occupational (Safety) Clothing (American War Standards):

L18.1-1944	†Leather Aprons	.50
L18.2-1944	†Cape Sleeves and Bibs	
L18.3-1944	†Knee-Length Leggings	
L18.4-1944	†Leather Coats	.50
L18.5-1944	†Leather Overalls	
L18.6-1944	†Leather Sleeves	
L18.7-1944	†Welders' Leather Gauntlet Gloves	.50
L18.8-1944	†Protective Leather Gloves, Steel-Stapled	
L18.9-1944	†Asbestos Gloves	
L18.10-1944	†Asbestos Gloves, Leather Reinforced	
L18.11-1944	†Asbestos Mittens	
L18.12-1944	†Asbestos Mittens, Leather Reinforced	
L18.14-1944	†Asbestos Aprons (Bib Type)	.50
L18.15-1944	†Asbestos Cape Sleeves and Bibs	
L18.16-1944	†Asbestos Leggings (Knee and Hip Length)	
L18.17-1944	†Asbestos Coats	
L18.18-1945	†Leather One-Finger Mittens	.50
L18.19-1945	†Leather Mittens	
L18.20-1945	†Asbestos One-Finger Mittens	
L18.21-1945	†Flame-Resistant Fabric Aprons (Bib Type)	.50
L18.22-1945	†Flame-Resistant Fabric Leggings (Knee and Hip Length)	
L18.23-1945	†Flame-Resistant Fabric Coats	
L18.24-1945	†Flame-Resistant Fabric Pants	
L18.25-1945	†Flame-Resistant Fabric Coveralls	
L18.26-1945	†Flame-Resistant Fabric Spats	.50
L18.27-1945	†Leather Spats	
L18.28-1945	†Asbestos Spats	
L18.29-1945	†Chemical-Resistant Gloves	.35

L22 — Rayon and Acetate Fabrics, Minimum requirements: (*Complete, Bound.....$4.25*)

L22.1.1 (Rev)-1952 through L22.1.24 (Rev)-1952	†Part I, Women's and Girls' Rayon Wearing-Apparel Fabrics (Part I and Test Methods..$3.00)	1.00
L22.2.1 (Rev)-1952 through L22.2.16 (Rev)-1952	†Part II, Men's and Boys' Rayon Wearing-Apparel Fabrics (Part II and Test Methods..$2.80)	.80
L22.3.1-1952 through L22.3.11-1952	†Part III, Rayon Home-Furnishings Fabrics (Part III and Test Methods..$2.65)	.65
	†Part IV, Test Methods	2.25

M — Mining

M2.1-1951	Installing and Using Electrical Equipment in Coal Mines, Safety Rules for (BMTP 402)	.20
M5-1932	Screen Testing of Ores (Hand Method), Methods for	.25
M6-1931	†Drainage of Coal Mines	.75
M7.1-1933	Frogs, Switches and Turnouts for Coal Mine Tracks (Drawings for Light Rail Turnouts)	.75
M7.2-1935	Frogs, Switches and Turnouts for Coal Mine Tracks (Drawings for Heavy Rail Turnouts)	
M11-1927	Wire Rope for Mines	*Under revision—Out of print*
M12.1-1946	†Construction and Maintenance of Ladders and Stairs for Mines	.35
M13-1925 R1942	†Rock-Dusting Coal Mines to Prevent Coal Dust Explosions	.25
M14-1930	†Explosives in Bituminous Coal Mines, Use of	.35
M15-1931	†Coal Mine Transportation, Safety Code for	.35
M17-1930	†Fire Fighting Equipment in Metal Mines	*gratis*
M18-1928	†Underground Transportation in Metal Mines	*gratis*

		Price
M19-1928	†Mechanical Loading Underground in Metal Mines	*gratis*
M20.1-1938	Classification of Coals by Rank, Specifications for (ASTM D388-38)	.25
M20.2-1937	Classification of Coals by Grade, Specifications for (ASTM D389-37)	.25
M20.3-1944	Designating the Size of Coal from Its Screen Analysis, Method for (ASTM D431-44)	.25
M20.4-1939	Commercial Varieties of Bituminous and Subbituminous Coals, Definitions for (ASTM D493-39)	.25
M24-1932	†Installing and Using Electrical Equipment in Metal Mines, Safety Rules for	*gratis*

O — Wood Industry

O1.1-1944	†Woodworking Machinery, Safety Code for	.75
O3-1926	Cross-ties and Switch-ties, Specifications for	*Withdrawn*
O4a-1927	Testing Small Clear Specimens of Timber, Methods of (ASTM D143-27)	*Under revision*
O4b-1927	Static Tests of Timbers in Structural Sizes, Methods of (ASTM D198-27)	.25
O5.1-1948	†Wood Poles, Specifications and Dimensions for	.50
O6-1939	Round Timber Piles, Specifications for (ASTM D25-37)	*Under revision*

P — Pulp and Paper Industry

P1-1936	†Paper and Pulp Mills, Safety Code for	*Under revision—Out of print*

PH — Photography and Motion Pictures

PH1 — Characteristics of Photographic Films, Plates and Papers:

(Special price of series, $7.00)

PH1.1-1953	★†Designation for Thickness of Photographic Paper (Revision of Z38.1.44-1944)	*In press*
PH1.2-1952	†5¼- x 2⅛-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.32-1945)	.25
PH1.3-1952	†5½- x 2⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.33-1945)	.25
PH1.4-1952	†7- x 1 13/16-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.34-1945)	.25
PH1.5-1952	†7- x 2⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.36-1945)	.25
PH1.6-1952	†7- x 4⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.37-1945)	.25
PH1.7-1952	†9½- x 4-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.38-1945)	.25
PH1.8-1952	†9½- x 5 1/16-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.39-1945)	.25
PH1.9-1952	†9½- x 6⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.40-1945)	.25
PH1.10-1952	†Roll Film and Unsensitized Leaders and Trailers for Aerial Photography, Dimensions for (Revision of Z38.1.41-1944)	.25
PH1.11-1953	★†Photographic Paper Rolls, Dimensions for (Revision of Z38.1.5-1943 and Partial Revision of Z38.1.6-1943)	.25
PH1.12-1953	★†Photographic Paper Sheets, Dimensions for (Revision of Z38.1.43-1947 and Partial Revision of Z38.1.6-1943)	.25
PH1.13-1953	★†Dimensions for Molded-Type Cores for Photographic Film and Paper Rolls (Revision of Z38.1.48-1947)	*In press*
PH1.14-1953	★†35-Millimeter Film Magazines for Still Picture Cameras, Dimensions for (Revision of Z38.1.47-1946)	*In press*
PH1.15-1953	★†Industrial X-ray Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.25-1947)	*In press*
PH1.16-1953	★†Graphic Arts Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.26-1947)	*In press*
PH1.17-1953	★†Medical X-Ray Sheet Film (Inch and Centimeter Sizes), Dimensions for (Revision of Z38.1.27-1947)	*In press*
PH1.18-1953	★†Professional Portrait and Commercial Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.28-1947)	*In press*
PH1.19-1944 R1952	†Emulsion Side of Photographic Sheet Films, Designation of (Reaffirmation of Z38.1.42-1944)	.25

The following standards were approved before PH1 numbers were assigned to standards on photographic films, plates, and papers. As these standards are revised or reaffirmed they will be changed to numbers in the PH1 series.

Z38.1.1-1951	†Film Packs, Dimensions for	.25
Z38.1.3-1948	†70-Millimeter Perforated (and Unperforated) Film (Cutting and Perforating Standard), Dimensions for	.25
Z38.1.7-1950	†Amateur Roll Film, Backing Paper, and Film Spools, Dimensions for	.75
Z38.1.29-1949	†Professional Portrait and Commercial Sheet Film (Centimeter Sizes), Dimensions for	.25
Z38.1.30-1951	†Photographic Dry Plates (Inch Sizes), Dimensions for	.25
Z38.1.31-1944 R1949	†Photographic Dry Plate (Centimeter Sizes), Dimensions for	.25
Z38.1.49-1951	†35-Millimeter Magazine Film (for Miniature Cameras, Dimensions for	.25
Z38.1.52-1951	†16-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.53-1951	†16-Millimeter 200-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.54-1951	†35-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.55-1951	†70-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.3.1-1943 R1948	†Definition of Safety Photographic Film	.35
Z38.3.2-1945	†Films for Permanent Records, Specifications for	.50
Z38.3.3-1946	†35-Millimeter Slidefilm Projection Rolls, Specifications for	.25
Z38.7.8-1947	†Microfilms, Practice for	.25

PH2 — Photographic Sensitometry:

(Special price of series, $3.25)

PH2.1-1952	†Spectral Diffuse Densities of Three-Component Subtractive Color Films	.35
PH2.2-1953	†Sensitometry and Grading of Photographic Papers (Revision of Z38.2.3-1947)	.50
PH2.3-1953	★†Relative Photographic Efficiency of Illuminants, Method for Determining the	*Under revision—Out of print*
PH2.4-1953	★†Exposure Guide Numbers for Photographic Lamps, Method for Determining	.50

The following standards were approved before PH2 numbers were assigned to standards on photographic sensitometry. As they are revised or reaffirmed they will be changed to numbers in the PH2 series.

Z38.2.1-1947	†Photographic Speed and Exposure Index, Method for Determining	*Under revision—Out of print*

		Price
PH2 — Photographic Sensitometry (Continued)		
Z38.2.2-1949	†Photographic Exposure Computer ..... (Special quantity discounts apply)	1.00
Z38.2.4-1946	†Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Method for Determining	.50
Z38.2.5-1946	†Diffuse Transmission Density	.75
Z38.2.6-1948	†General-Purpose Photographic Exposure Meters (Photoelectric Type)	.50
Z52.43-1944	Photographic Flash Lamps, including Supplement Z52.43a (Federal Specification W-L-122 and Supplement) (American War Standard) (Under Revision)	.10
PH3 — Photographic Apparatus:	*(Special price of series, $7.50)*	
PH3.1-1952	†Back Window Location for Roll Film Cameras (Revision of Z38.4.9-1944)	.25
PH3.2-1952	†Performance Characteritsics of Focal-Plane Shutters Used in Still Picture Cameras, Method for Determining	.35
PH3.3-1952	†Exposure-Time Markings for Focal-Plane Shutters Used in Still Picture Cameras..	.25
PH3.4-1952	†Performance Characteristics of Between-the-Lens Shutters Used in Still Picture Cameras, Method for Determining.....	.35
PH3.5-1952	†Exposure-Time Markings for Between-the-Lens Shutters Used in Still Picture Cameras	.25
PH3.6-1952	†Tripod Connections for American Cameras, ¼-Inch-20 Thread (Revision of Z38.4.1-1942)	.25
PH3.7-1952	†Tripod Connections for Heavy-Duty or European Cameras, ⅜-Inch-16 Thread with Adapter for ¼-Inch-20 Tripod Screws (Revision of Z38.4.2-1942)	.25
PH3.8-1953	★†Contact Printers, Specifications for (Revision of Z38.7.10-1944)	.25
PH3.9-1953	★†Masks (Separate) for Use in Photographic Contact Printing of Roll Film Negatives, Specifications for (Revision of Z38.7.12-1944)	.25
PH3.11-1953	★†Stereo Still Pictures on 35-Millimeter Film (5-Perforation Format) Dimensions for	.25
PH3.12-1953	★†Attachment Threads for Lens Accessories, Specifications for (Revision of Z38.4.12)..	.25
PH3.14-1944 R1952	†Front Lens Mounts for Cameras, Dimensions of (Reaffirmation of Z38.4.10-1944)	.25
PH3.15-1944 R1952	†Printing Frames, Specifications for (Reaffirmation of Z38.7.11-1944)	.25
PH3.16-1947 R1952	†Resolving Power of Lenses for Projectors for 35-mm Slidefilm and 2- x 2-Inch Slides, Method for Determining (Reaffirmation of Z38.7.16-1947)	.25
PH3.17	†Photographic Filter Sizes, Specifications for (Proposed American Standard; published for trial and criticism)	.25
PH3.18	†Internal Synchronization of Front Shutters, Criteria for Classifying and Testing the (Proposed American Standard; published for trial and criticism)	.35

The following standards were approved before PH3 numbers were assigned to standards on photographic apparatus. As they are revised or reaffirmed they will be changed to numbers in the PH3 series.

Z38.1.50-1948	†Radiographic Intensifying Screens, Dimensions for	.25
Z38.1.51-1951	†Photographic Double Film Holders of the Lock-Rib Type, Dimensions for	.25
Z38.4.3-1947	†Distance Scales Marked in Feet for Focusing Camera Lenses	.25
Z38.4.4-1942 R1947	†Focal Lengths of Lenses, Marking	.25
Z38.4.5-1950	†Shutter Cable Release Tip and Socket with Taper (European) Thread	.25
Z38.4.6-1950	†Shutter Cable Release Tip and Socket with Straight (American) Thread	.25
Z38.4.7-1950	†Lens Aperture Markings	.25
Z38.4.8-1950	†Roll Film Cameras, Picture Sizes for....	.25
Z38.4.11-1944	†Threads for Attaching Mounted Lenses to Photographic Equipment	.25
Z38.4.13-1948	†Distance Scales Marked in Meters for Focusing Camera Lenses	.25
Z38.4.19-1948	†Nomenclature, Parts of a Photographic Objective Lens	.25
Z38.4.20-1948	†Apertures and Related Quantities Pertaining to Photographic Lenses, Methods of Designating and Measuring	.25
Z38.4.21-1948	†Focal Lengths and Focal Distances of Photographic Lenses, Methods of Designating and Measuring	.35
Z38.4.26-1951	†Flash Synchronizing Equipment, Bipost-Type, Connecting Cord Ends and Pins	.25
Z38.4.27-1951	†Flash Synchronizing Equipment, Bayonet-Type, Connecting Cord Ends and Pins	.25
Z38.7.4-1944 R1948	†Projectors for Opaque Materials for Use in Small Auditoriums, Specifications for	.25
Z38.7.5-1948	†Printing and Projection Equipment, Methods of Testing	.25
Z38.7.6-1950	†Photographic Enlargers, Methods for Testing	.35
Z38.7.9-1946	†Microfilm Readers, Specifications for..	.25
Z38.7.14-1949	†Lantern Slide Projectors, Specifications for	.25
Z38.7.15-1945	†Slidefilm Projectors, Specifications for...	.25
Z38.7.17-1946	†Reels for Processed Microfilm	.25
Z38.7.19-1950	†Lantern Slides, Dimensions for	.25
PH4 — Photographic Processing:	*(Special price of series, $12.25)*	
PH4.2-1952	Sheet Film Processing Tanks, Specifications for (Revision of Z38.8.15-1949)..	.25
PH4.3-1952	†Photographic Trays, Specifications for..	.25
PH4.4-1952	†Channel-Type Photographic Hangers, Plates and Sheet Film, Specifications for	.25
PH4.5-1953	★†Temperature for Photographic Processing Solutions (Revision of Z38.8.1-1944)	*In press*
PH4.6-1953	★†Converting Weights and Measures for Photographic Use, Method for (Revision of Z38.8.2-1945)	*In press*
PH4.8-1953	★†Thiosulfate Content of Processed Photographic Film, Method of Determining the	*In press*
PH4.10-1953	★†Photographic Grade Blotters, Requirements for	.25

Standards in the Z38 series below were approved before PH4 numbers were assigned to standards on photographic processing. As they are revised or reaffirmed they will be changed to numbers in the PH4 series.

PH4 numbers referring to standards for Photographic Grade Chemicals can be found under Z38.8 below. They are listed numerically according to the number after the second decimal point.

Z38.8.3-1947	†Photographic Processing Manipulation of Films and Plates, Practice for	.50
Z38.8.4-1945	†Bite of Film Clips, Dimensions for	.25
Z38.8.6-1949	†Photographic Processing Manipulation of Paper, Practice for	.50

		Price
PH4 — Photographic Processing *(Continued)*		
Z38.8.7-1946	†Radiographic Film Processing Tanks, Internal Dimensions for	.25
Z38.8.8-1946	†Deep Tanks for Commercial Photofinishing, Internal Dimensions for	.25
Z38.8.9-1946	†Scales, Graduates, and Thermometers for Use in Photography, Accuracy of	.25
Z38.8.11-1948	†Photographic Thermometers	.25
Z38.8.12-1948	†Photographic Graduates	.25
Z38.8.13-1950	†Safety-Time of Photographic Dark-room Illumination, Procedure for Determining the	.25
Z38.8.14-1950	†Photographic Wetting Agents, Requirements for	.25
Z38.8.17-1948	†Permanency of the Silver Images of Processed Films, Plates, and Papers, Method for Predicting the	.25
Z38.8.18-1948	†Chromium-Plated Surfaces for Ferrotyping	.25
Z38.8.19-1948	†Maximum Safe Temperatures for Photographic Processing Solutions, Method for Determining	.25
Z38.8.20-1948	†Melting Point of the Photographic Layer of Films, Plates, and Papers, Method for Determining the	.25
Z38.8.21-1950	†Photographic Filing Envelopes for Storing Processed Photographic Films, Plates, and Papers, Requirements for	.25
Z38.8.23-1949	†X-Ray Sheet Film Hangers (Clip-Type)	.25
Z38.8.25-1950	†Residual Thiosulfate and Tetrathionate in Processed Photographic Papers, Method for Determining	.35
Specifications for Photographic Grade Chemicals:		
	Acids	
Z38.8.100-1949	†Acetic Acid, Glacial	.25
Z38.8.101-1949	†Sulfuric Acid	.25
Z38.8.102-1949	†Citric Acid	.25
Z38.8.103-1949	†Boric Acid, Crytsalline	.25
Z38.8.104-1949	†Hydrochloric Acid	.25
PH4.105-1952	†Photographic Grade Sodium Acid Sulfate, Fused ($NaHSO_4$) (Sodium Bisulfate, Fused; Niter Cake), Specification for	.25
Z38.8.106-1949	†Acetic Acid, 28 Percent	.25
	Developing Agents	
Z38.8.125-1948	†Mono-Methyl-Para-Aminophenol Sulfate (Armol, Elon, Genol, Graphol, Metol, Photol, Pictol, Rhodo, Veritol)	.25
Z38.8.126-1949	†Hydroquinone (Para - Dihydroxybenzene, Quinol, Hydrochinone, Hydroquinol)	.25
Z38.8.127-1948	†2, 4-Diaminophenol Hydrochloride (Acrol, Amidol, Dianol, Dolmi)	.25
Z38.8.128-1949	†Para-Hydroxyphenylglycin (Athenon, Glycin, Iconyl, Monazol)	.25
Z38.8.129-1948	†Para-Aminophenol Hydrochloride (Kodelon, P.A.P.)	.25
Z38.8.130-1948	†Pyrogallic Acid (1,2,3-Trihydroxybenzene, Pyro, Pyrogallol)	.25
Z38.8.131-1948	†Catechol (Ortho-Dihydroxybenzene, Pyrocatechin, Pyrocatechol)	.25
Z38.8.132-1948	†Para-Phenylenediamine (1,4-Diaminobenzene)	.25
Z38.8.133-1948	†Para - Phenylenediamine Dihydrochloride (1,4-Diaminobenzene Dihydrochloride)	.25
Z38.8.134-1948	†Chlorhydroquinone (2 - Chlor - 1,4 - Dihydroxybenzene, Adurol, C.H.Q.)	.25
	Hardeners	
Z38.8.150-1949	†Aluminum Potassium Sulfate, Crystalline	.25
Z38.8.151-1949	†Chromium Potassium Sulfate, Crystalline	.25
Z38.8.152-1949	†Formaldehyde Solution	.25
Z38.8.153-1949	†Paraformaldehyde	.25
	Miscellaneous	
Z38.8.175-1949	†Sodium Sulfate, Anhydrous	.25
Z38.8.176-1949	†Sodium Acetate, Anhydrous	.25
Z38.8.177-1949	†Potassium Dichromate	.25
Z38.8.178-1949	†Potassium Permanganate	.25
Z38.8.179-1949	†Potassium Ferricyanide	.25
Z38.8.180-1949	†Copper Sulfate	.25
Z38.8.181-1949	†Potassium Persulfate	.25
Z38.8.182-1949	†Sodium Sulfide, Fused	.25
PH4.183-1953	★†Photographic Grade Ammonium Chloride, Specification for (NH_4Cl)	.25
PH4.184-1953	★†Photographic Grade Ammonium Sulfate, Specification for $(NH_4)_2SO_4$	.25
	Restrainers and Antifoggants	
Z38.8.200-1949	†Potassium Bromide	.25
Z38.8.201-1948	†Potassium Iodide	.25
Z38.8.202-1948	†Potassium Chloride	.25
Z38.8.203-1948	†Sodium Chloride	.25
Z38.8.204-1948	†Benzotriazole	.25
Z38.8.205-1948	†5-Methylbenzotriazole	.25
Z38.8.206-1948	†Nitrobenzimidazole	.25
	Alkalies	
Z38.8.225-1948	†Sodium Hydroxide	.25
Z38.8.226-1948	†Potassium Hydroxide	.25
Z38.8.227-1948	†Sodium Carbonate, Monohydrate	.25
Z38.8.228-1948	†Sodium Carbonate, Anhydrous	.25
Z38.8.229-1948	†Potassium Carbonate	.25
Z38.8.230-1948	†Sodium Tetraborate	.25
Z38.8.231-1948	†Sodium Metaborate	.25
Z38.8.232-1948	†Ammonium Hydroxide	.25
	Fixing Agents	
PH4.250-1953	★†Sodium Thiosulfate, Anhydrous	.25
PH4.251-1953	★†Sodium Thiosulfate, Crystalline	.25
PH4.252-1953	★†Photographic Grade Ammonium Thiosulfate, 60 Percent Solution, $(NH_4)_2S_2O_3$, (Ammonium Hypo Solution), Specification for	*In press*
PH4.253-1953	★†Photographic Grade Ammonium Thiosulfate, $(NH_4)_2S_2O_3$, (Ammonium Hypo), Specification for	*In press*
	Sulfites	
PH4.275-1952	†Photographic Grade Sodium Sulfite (Na_2SO_3), Specification for (Revision of Z38.8.275-1948)	.25
Z38.8.276-1949	†Sodium Bisulfite	.25
Z38.8.277-1948	†Potassium Metabisulfite	.25
PH22 — Motion Pictures:	*(Special price of series, with binder, $17.00; without binder, $15.00)*	
PH22.1-1953	┌○○mm Motion Picture Film, Alternate Standards for Either Positive or Negative Raw Stock, Dimensions for	.25
PH22.5-1953	★†16-Millimeter Film, Perforated Two Edges, Dimensions for (Revision of Z22.5-1947)	*In press*
PH22.11-1953	★†16-Millimeter Motion Picture Projection Reels	.35
PH22.12-1947	★†16-Millimeter Film, Perforated One Edge, Dimensions for (Revision of Z22.12-1947)	*In press*
PH22.21-1953	★†8-Millimeter Motion Picture Film, Usage in Camera (Revision of Z22.21-1946)	*In press*
PH22.22-1953	★†8-Mm Motion Picture Film, Usage in Projector (Revision of Z22.22-1947)	*In press*

		Price
PH22.24-1952	†Splices for 16-Millimeter Motion Picture Films for Projection (Revision of Z22.24-1941, Z22.25-1941, and Z52.20-1944)	.25
PH22.27-1947 R1953	†Transmission Density of Motion Picture Films, Method of Determining (Reaffirmation of Z22.27-1947) (Sold only with Z38.2.5-1946)	.75
PH22.37-1944 R1953	†Raw Stock Cores for 35-Millimeter Motion Picture Film (Reaffirmation of Z22.37-1944)	.25
PH22.38-1952	†Raw Stock Cores for 16-Millimeter Motion Picture Film (Revision of Z22.38-1944)	.25
PH22.39-1953	★†Screen Brightness for 35mm Motion Pictures (Revision of Z22.39-1944)	.25
PH22.43-1953	★†16mm 3000-Cycle Flutter Test Film (Revision of Z22.43-1946)	.25
PH22.44-1953	★†16mm Multifrequency Test Film (Revision of Z22.44-1946)	.25
PH22.46-1946 R1953	†16-Millimeter Poistive Aperture Dimensions and Image Size for Positive Prints Made from 35-Millimeter Negatives (Reaffirmation of Z22.46-1946)	.25
PH22.47-1946 R1953	†Negative Aperture Dimensions and Image Size for 16-Millimeter Duplicate Negatives Made from 35-Millimeter Positive Prints (Reaffirmation of Z22.47-1946)	.25
PH22.50-1946 R1952	†Reel Spindles for 16-Millimeter Motion Picture Projectors (Formerly Z22.50-1946)	.25
PH22.53-1953	★†Method of Determining Resolving Power of 16mm Motion Picture Projector Lenses (Revision of Z22.53-1946)	.25
PH22.60-1948 R1953	†Theatre Sound Test Film for 35-Millimeter Motion Picture Sound Reproducing Systems (Reaffirmation of Z22.60-1948)	.25
PH22.62-1948 R1953	†Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Laboratory Type) (Reaffirmation of Z22.62-1948)	.25
PH22.65-1948 R1953	†Scanning-Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type) (Reaffirmation of Z22.65-1948)	.25
PH22.66-1948 R1953	†Scanning-Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers (Laboratory Type) (Reaffirmation of Z22.66-1948)	.25
PH22.67-1948 R1953	†1000-Cycle Balancing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Reaffirmation of Z22.67-1948)	.25
PH22.69-1948 R1953	†Sound Records and Scanning Area of Double Width Push-Pull Sound Prints (Normal Centerline Type) (Reaffirmation of Z22.69-1948)	.25
PH22.70-1948 R1953	†Sound Records and Scanning Area of Double Width Push-Pull Sound Prints (Offset Centerline Type) (Reaffirmation of Z22.70-1948)	.25
PH22.73-1951	†32-Millimeter on 35-Millimeter Motion Picture Negative Raw Stock, Cutting and Perforating Dimensions for	.25
PH22.74-1951	†Zero Point for Focusing Scales on 16-Millimeter and 8-Millimeter Motion Picture Cameras	.25
PH22.75-1953	★†A and B Windings of 16-Millimeter Film, Perforated One Edge	*In press*
PH22.76-1951	†Mounting Threads and Flange Focal Distances for Lenses on 16-Millimeter and 8-Millimeter Motion Picture Cameras	.25
PH22.77-1952	†Splices for 8-Millimeter Motion Picture Films	.25
PH22.82-1951	†Sound Transmission of Perforated Projection Screens	.25
PH22.83-1952	†Edge-Numbering 16-Millimeter Motion Picture Film	.25
PH22.84-1953	†Projection Lamps, Medium Prefocus Ring Double-Contact Base-Up Type for 16mm and 8mm Motion Picture Projectors, Dimensions for	.25
PH22.85-1953	†Projection Lamps, Medium Prefocus Base-Down Type for 16mm and 8mm Motion Picture Projectors, Dimensions for	.25
PH22.86-1953	★†Dimensions for 200-Mil Magnetic Sound Tracks on 35mm and 17½mm Motion Picture Film	.25
PH22.87-1953	★†Dimensions for 100-Mil Magnetic Coating on Single-Perforated 16mm Motion-Picture Film	.25
PH22.90-1953	★†Motion Picture Lenses, Aperture Calibration of	*In press*
PH22.92-1953	†Enlargement Ratio for 16mm to 35mm Optical Printing	.25
PH22.93-1953	★†Dimensions for 35mm Motion Picture Short-Pitch Negative Film	*In press*

The following standards were approved before PH22 numbers were assigned to standards on motion pictures. As they are revised or reaffirmed they will be changed to numbers in the PH22 series.

Z22.2-1946	†Emulsion and Sound Record Positions in Camera for 35-Millimeter Sound Motion Picture Film	.25
Z22.3-1946	†Emulsion and Sound Record Positions in Projector for 35-Millimeter Sound Motion Picture Film	.25
Z22.4-1941	†35-mm Film; Projector Reels	.25
Z22.7-1950	†Picture Aperture of 16-Millimeter Motion Picture Cameras, Location and Size of	.35
Z22.8-1950	†Picture Aperture of 16-Millimeter Motion Picture Projectors, Location and Size of	.35
Z22.9-1946	†Emulsion Position in Camera for 16-Millimeter Silent Motion Picture Film	.25
Z22.10-1947	†Emulsion Position in Projector for Direct Front Projection of 16-Millimeter Silent Motion Picture Film	.25
Z22.15-1946	†Emulsion and Sound Record Positions in Camera for 16-Millimeter Sound Motion Picture Film	.25
Z22.16-1947	†Emulsion and Sound Record Positions in Projector for Direct Front Projection of 16-Millimeter Sound Motion Picture Film	.25
Z22.17-1947	†8-Millimeter Motion Picture Negative and Positive Raw Stock, Cutting and Perforating Dimensions for	.25
Z22.19-1950	†Picture Aperture of 8-Millimeter Motion Picture Cameras, Location and Size of	.25
Z22.20-1950	†Picture Aperture of 8-Millimeter Motion Picture Projectors, Location and Size of	.25
Z22.23-1941	†8-mm Silent Film; Projection Reels	.25
Z22.28-1946	†Projection Rooms and Lenses for Motion Picture Theatres, Dimensions for	.25
Z22.29-1948	†Theater Projection Screens, Dimensions for	.25
Z22.31-1946	†Motion Picture Safety Film, Definition for (sold only with Z38.3.1-1943)	.35

Price

PH22 — Motion Pictures *(Continued)*

Z22.34-1949 †35-Millimeter Motion Picture Negative Raw Stock, Cutting and Perforating Dimensions for ..... .25

Z.22.35-1947 †16-Tooth 35-Millimeter Motion Picture Projector Sprockets, Dimensions for .... .25

Z22.36-1947 †35-Millimeter Motion Picture Positive Raw Stock, Cutting and Perforating Dimensions for ..... .25

Z22.40-1950 †Sound Records and Scanning Area of 35-Millimeter Sound Motion Picture Prints .25

Z22.41-1946 †Sound Records and Scanning Area of 16-Millimeter Sound Motion Picture Prints .25

Z22.42-1946 †Sound-Focusing Test Films for 16-Millimeter Sound Motion Picture Projection Equipment, Specifications for ..... .25

Z22.45-1946 †400-Cycle Signal Level Test Film for 16-Millimeter Sound Motion Picture Projection Equipment, Specifications for... .25

Z22.48-1946 †Printer Aperture Dimensions for Contact Printing 16-Millimeter Positive Prints from 16-Millimeter Negatives ..... .25

Z22.49-1946 †Printer Aperture Dimensions for Contact Printing 16-Millimeter Reversal and Color Reversal Duplicate Prints ..... .25

Z22.51-1946 †Intermodulation Tests on Variable-Density 16-Millimeter Sound Motion Picture Prints, Method of Making ..... .25

Z22.52-1946 †Cross-Modulation Tests on Variable-Area 16-Millimeter Sound Motion Picture Prints, Method of Making ..... .25

Z22.54-1946 †Freedom from Travel Ghost in 16-Millimeter Sound Motion Picture Projectors, Method of Determining ..... .25

Z22.55-1947 †35-Millimeter Sound Motion Picture Release Prints in Standard 2000-Foot Lengths, Specifications for ..... .25

Z22.56-1947 †Nomenclature for Motion Picture Film Used in Studios and Processing Laboratories ..... .50
(19½- x 28½-inch reproduction of chart on pages 8 and 9 sold separately....30¢)

Z22.57-1947 †Buzz-Track Test Film for 16-Millimeter Motion Picture Sound Reproducers.... .25

Z22.58-1947 †Picture Projection Aperture of 35-Millimeter Sound Motion Picture Projectors.. .25

Z22.59-1947 †Photographing Aperture of 35-Millimeter Sound Motion Picture Cameras ..... .25

Z22.61-1949 †Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type) ..... .25

Z22.65-1948 †Scanning-Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type) ..... .25

Z22.68-1949 †Buzz-Track Test Film for 35-Millimeter Motion Picture Sound Reproducers.... .25

Z22.71-1950 †32-Millimeter Sound Motion Picture Negative and Positive Raw Stock, Cutting and Perforating Dimensions for ..... .25

Z22.72-1950 †32-Millimeter Silent Motion Picture Negative and Positive Raw Stock, Cutting and Perforating Dimensions for ..... .25

Z22.78-1950 †Mounting Frames for Theater Projection Screens, Dimensions for ..... .25

Z22.79-1950 †16-Millimeter Sound Projector Test Film.. .25

Z22.80-1950 †Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Laboratory Type) ..... .25

Z22.81-1950 †Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Service Type) ..... .25

Price

X — Office Equipment and Supplies

X2.1.1-1951 †Desks and Tables for General Office Use, Dimensions of ..... .25

X2.1.2-1952 †Installation of Telephone Equipment on Desks, Provisions for ..... .25

X2.4.1-1951 †Index Cards and Record-Keeping Cards, Size Designation for ..... .25

Y — Drawings and Symbols

Y is the new letter assigned to standards for abbreviations, charts and graphs, drawings, graphical symbols, and letter symbols. Standards previously approved are lettered "Z".

Y1 — Abbreviations

The following standard will be numbered Y1 when it is revised.

Z10.1-1941 Abbreviations for Scientific and Engineering Terms ..... .50

Y10 — Letter Symbols:

(see also B6.5 and Z7.1)

Y10.9-1953 ★Letter Symbols for Radio 1.00

Y10.10-1953 Meteorology, Letter Symbols for 1.00

Y10.11-1953 ★Letter Symbols for Acoustics .....*In press*

The following standards were approved before Y10 numbers were assigned to standards on letter symbols. As they are revised or reaffirmed they will be changed to numbers in the Y10 series.

Z10f-1928 Mathematical Symbols ..... .40

Z10.2-1942 Letter Symbols for Hydraulics ..... .50

Z10.3-1948 R1953 Letter Symbols for Mechanics of Solid Bodies ..... .50

Z10.4-1943 Letter Symbols for Heat and Thermodynamics, Including Heat Flow ..... .65

Z10.5-1949 Letter Symbols for Electrical Quantities.. .60

Z10.6-1948 Letter Symbols for Physics 1.00

Z10.7-1950 †Letter Symbols for Aeronautical Sciences.. 1.25

Z10.8-1949 Letter Symbols for Structural Analysis.. .50

Z10.12-1946 Letter Symbols for Chemical Engineering.. .50

Y14 — Drawings and Drafting Room Practice:

The number of this standard will be changed to Y14 when it is revised.

Z14.1-1946 Drawings and Drafting Room Practice.... 1.50

Y15 — Charts and Graphs:

The following numbers will be changed to Y15 when the standards are revised or reaffirmed.

Z15.1-1932 R1947 Engineering and Scientific Charts for Lantern Slides ..... .60

Z15.2-1938 R1947 Time-Series Charts, Manual of Design and Construction 1.50

Z15.3-1943 R1947 Engineering and Scientific Graphs for Publications ..... .90

Y32 — Graphical Symbols:

Y32.1.1-1951 Single (One) Line Electrical Engineering Diagrams, Graphical Symbols for 1.40

Y32.9-1943 Architectural Plans, Graphical Electrical Symbols for (Redesignation of Z32.9-1943) .40

The following standards were approved before Y32 numbers were assigned to standards on graphical symbols designations. As they are revised or reaffirmed they will be changed to numbers in the Y32 series.

Z10g5-1933 Graphical Symbols Used for Electric Traction including Railway Signaling (AIEE 17g5-1934) .....*Out of print*

Z32.2.1-1949 Welding, Graphical Symbols for ..... .50

Z32.2.2-1949 Plumbing, Graphical Symbols for ..... .50

Z32.2.3-1949 Pipe Fittings, Valves, and Piping, Graphical Symbols for ..... .50

Z32.2.4-1949 Heating, Ventilating, and Air Conditioning, Graphical Symbols for ..... .50

		Price
Y32 — Graphical Symbols (Continued)		
Z32.2.5-1950	Railroad Use, Graphical Symbols for	.75
Z32.2.6-1950	Heat-Power Apparatus, Graphical Symbols for	.50
Z32.3-1946	†Electric Power and Control, Graphical Symbols for ....*Under revision—Out of print*	
Z32.5-1944	†Telephone, Telegraph and Radio Use, Graphical Symbols for *Under revision—Out of print*	
Z32.10-1948	Electron Devices, Graphical Symbols for *Under revision—Out of print*	
Z32.12-1947	Electric Apparatus, Basic Graphical Symbols for .....*Under revision—Out of print*	
Z32.13-1950	†Abbreviations for Use on Drawings	1.00

Z — Miscellaneous

Z1.1-1941	†Guide for Quality Control	1.00
Z1.2-1941	†Control Chart Method of Analyzing Data (American War Standards)	
Z1.3-1942	†Control Chart Method of Controlling Quality During Production (American War Standard)	1.00
Z2-1938	Protection of Heads, Eyes, and Respiratory Organs, Safety Code for (NBS Handbook H24) .....*Under revision—Out of Print*	
Z4.1-1935	†Industrial Sanitation in Manufacturing Establishments, Safety Code for *Under revision—Out of print*	
Z4.2-1942	†Drinking Fountains, Specifications for....	.25
Z4.3-1935	Sanitary Privy (Supplement No. 108 to the Public Health Report) *Under revision—Out of print*	
Z7.1-1942	Illuminating Engineering Nomenclature and Photometric Standards	.50
Z8-1941	†Laundry Machinery and Operations, Safety Code for	.35
Z9	†Fundamentals Relating to the Design and Operation of Exhaust Systems (Report published for comment) .....*Out of print*	
Z9.1-1951	†Ventilation and Safe Operation of Open-Surface Tanks	.75

Z11 — Petroleum Products:

(Special price of series, $11.00)

Z11.1-1936 R1947	Standard Abridged Volume Correction Table for Petroleum Oils (ASTM D206-36; API 500-36) .....*Withdrawn*	
Z11.2-1953	★Viscosity by Means of the Saybolt Viscosimeter, Method of Test for (ASTM D88-53; API 518-53; AASHO T72-53) *In press*	
Z11.3-1952	Cone Penetration of Lubricating Grease, Test for (ASTM D217-52T)	.25
Z11.4-1942 R1947	Melting Point of Paraffin Wax, Method of Test for (ASTM D87-42; API 513-42)..	.25
Z11.5-1948	Cloud and Pour Points, Method of Test for (ASTM D97-47; API 506-47)	.25
Z11.6-1952	Flash and Fire Points by Means of Open Cup, Method of Test for (ASTM D92-52; AASHO T48-52)	.25
Z11.7-1952	Flash Point by Means of the Pensky-Martens Closed Tester, Method of Test for (ASTM D93-52; AASHO T73-52) ..	.25
Z11.9-1947	Water in Petroleum Products and Other Bituminous Materials, Method of Test for (ASTM D95-46; API 519-46; AASHO T55-46)	.25
Z11.10-1953	★Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products, Method of Test for (ASTM D86-53; AASHO T115-53) .....*In press*	
Z11.11-1953	★Distillation of Natural Gasoline, Method of Test for (ASTM D216-53) .....*In press*	
Z11.13-1952	Sulphur in Petroleum Products by the Bomb Method, Method of Test for (ASTM D129-52)	.25
Z11.14-1950	Thermal Value of Fuel Oil, Method of Test for (ASTM D240-50; API 517-50)..	.25
Z11.16-1948	Analysis of Grease, Methods of (ASTM D128-47; API 501-47)	.25
Z11.17-1949	Burning Quality of Kerosine, Method of Test for (ASTM D187-49)	.25
Z11.18-1930 R1947	Burning Quality of Mineral Seal Oil, Method of Test for (ASTM D239-30); API 504-30)	.25
Z11.19-1936 R1947	Burning Quality of Long-Time Burning Oil for Railway Use, Method of Test for (ASTM D219-36; API 503-36)	.25
Z11.20-1952	Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for (ASTM D94-52T)	.25
Z11.21-1930 R1947	Detection of Free Sulfur and Corrosive Sulfur Compounds in Gasoline, Method of Test for (ASTM D130-30; API 521-30) *Under revision*	
Z11.22-1949	Melting Point of Petrolatum and Microcrystalline Wax, Method of Test for (ASTM D127-49)	.25
Z11.23-1932 R1947	Autogenous Ignition Temperatures of Petroleum Products, Method of Test for (ASTM D286-30; API 522-30)	.25
Z11.24-1952	Flash Point by Means of the Tag Closed Tester, Method of Test for (ASTM D56-52)	.25
Z11.25-1952	Carbon Residue of Petroleum Products (Conradson Carbon Residue), Method of Test for (ASTM D189-52)	.25
Z11.26-1953	★Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of Test for (ASTM D158-53) .....*In press*	
Z11.28-1953	★Terms Relating to Petroleum, Definitions of (ASTM D288-53) .....*In press*	
Z11.29-1935 R1947	Dilution of Crankcase Oils, Method of Test for (ASTM D322-35; API 524-35)	.25
Z11.30-1952	Precipitation Number of Lubricating Oils, Method of Test for (ASTM D91-52) ..	.25
Z11.31-1952	Gravity of Petroleum and Petroleum Products by Means of the Hydrometer, Method of Test for (ASTM D287-52) ..	.25
Z11.32-1952	Distillation of Crude Petroleum, Method of Test for (ASTM D285-52)	.25
Z11.33-1935	Sampling Petroleum and Petroleum Products, Methods of (ASTM D270-33; API 528-33) .....*Under revision*	
Z11.35-1953	★Color of Refined Petroleum Oil by Means of Saybolt Chromometer, Method of Test for (ASTM D156-53T) .....*In press*	
Z11.36-1953	★Existent Gum in Gasoline (Air-Jet Evaporation), Method of Test for (ASTM D381-52T; API 529-52) .....*In press*	
Z11.37-1953	★Knock Characteristics of Motor Fuels by the Motor Method, Test for (ASTM D357-53) .....*In press*	
Z11.39-1943 R1947	Viscosity-Temperature Charts for Liquid Petroleum Products (ASTM D341-43; API 533-43) (Charts A, B, C, D, and E)..	1.25
Z11.41-1952	Unsulfonated Residue of Plant Spray Oils, Method of Test for (ASTM D483-52T)..	.25

		Price
Z11.42-1952	Stoddard Solvent, Specifications for (ASTM D484-52)	.25
Z11.43-1952	Distillation of Plant Spray Oils, Method of Test for (ASTM D447-52T)	*In press*
Z11.44-1952	Vapor Pressure of Petroleum Products (Reid Method), Method of Test for (ASTM D323-52)	.25
Z11.45-1953	★Calculating Viscosity Index, Method for (ASTM D567-53; API 540-53)	*In press*
Z11.46-1953	★Conversion of Kinematic Viscosity to Saybolt Universal Viscosity, Method for (ASTM D446-53; API 534-53)	*In press*
Z11.47-1952	Carbon Residue of Petroleum Products (Ramsbottom Carbon Residue), Method of Test for (ASTM D524-52T)	.25
Z11.48-1953	★Tetraethyl Lead in Gasoline, Method of Test for (ASTM D526-53T)	*In press*
Z11.49-1945 R1949	Carbonizable Substance in White Mineral Oil (Liquid Petrolatum), Method of Test for (ASTM D565-45; API 545-45)	.25
Z11.50-1945 R1949	Carbonizable Substances in Paraffin Wax, Method of Test for (ASTM D612-45; API 544-45)	.25
Z11.51-1943 R1947	Dropping Point of Lubricating Grease, Method of Test for (ASTM D566-42; API 543-42)	.25
Z11.52-1953	★Oil Content of Paraffin Wax, Test for (ASTM D721-53T)	*In press*
Z11.53-1953	★Conversion of Kinematic Viscosity to Saybolt Furol Viscosity, Method for (ASTM D666-53; API 548-53)	*In press*
Z11.54-1947	Ash Content of Petroleum Oils, Method of Test for (ASTM D482-46; API 549-46)	.25
Z11.56-1949	Chemical Analysis for Metals in Lubricating Oils, Methods of (ASTM D811-48)	.25
Z11.57-1949	Sulfated Residue, Lead, Iron, and Copper in New and Used Lubricating Oils, Methods of Test for (ASTM D810-48)	.25
Z11.58-1949	Sediment in Fuel Oil by Extraction, Method of Test for (ASTM D473-48)	.25
Z11.59-1952	Neutralization Value (Acid and Base Numbers) by Electrometric Titration, Method of Test for (ASTM D664-52)	.25
Z11.60-1949	Oxidation Stability of Aviation Gasoline (Potential Gum Method), Method of Test for (ASTM D873-49)	.25
Z11.61-1949	Congealing Point of Pharmaceutical Petrolatums, Method of Test for (ASTM D938-49)	.25
Z11.62-1949	Measurements of Density of Hydrocarbon Liquids by the Pycnometer, Method for (ASTM D941-49)	.25
Z11.63-1949	Oxidation Stability of Gasoline (Induction Period Method), Method of Test for (ASTM D525-49)	.25
Z11.64-1950	Interfacial Tension of Oil Against Water by the Ring Method, Test for (ASTM D971-50)	.25
Z11.65-1950	Oxidation Stability of Lubricating Greases by the Oxygen Bomb Method, Test for (ASTM D942-50)	.25
Z11.66-1950	Determination of Butadiene Content of Polymerization Grade Butadiene (ASTM D973-50)	.25
Z11.67-1952	Saponification Number of Petroleum Products by Potentiometric Titration, Test for (ASTM D939-52)	.25
Z11.68-1951	Sulfated Residue from New Lubricating Oils, Test for (ASTM D874-51)	.25
Z11.69-1951	Knock Characteristics of Motor Fuels by the Research Method, Test for (ASTM D908-51)	.25
Z11.70-1951	Benzene and Toluene by Ultra-Violet Spectrophotometry, Test for (ASTM D1017-51)	.25
Z11.71-1951	Olefinic Plus Aromatic Hydro-carbons in Petroleum, Test for (ASTM D1019-51)	.25
Z11.72-1951	Apparent Viscosity of Lubricating Greases, Test for (ASTM D1092-51)	.25
Z11.73-1951	Sodium in Lubricating Oils and Lubricating Oil Additives, Test for (ASTM D1026-51)	.25
Z11.74-1952	Acetylene in Polymerization Grade Butadiene by Silver Nitrate Method, Test for (ASTM D1020-52)	.25
Z11.75-1952	Separation of Residue from Butadiene, Test for (ASTM D1023-52)	.25
Z11.76-1952	Nonvolatile Residue of Polymerization Grade Butadiene, Test for (ASTM D1025-52)	.25
Z11.77-1952	Acidity of Residue from Distillation of Gasoline and of Petroleum Solvents, Test for (ASTM D1093-52)	.25
Z11.78-1953	★Foaming Characteristics of Crankcase Oils, Test for (ASTM D892-46T)	*In press*
Z11.79-1953	★Butadiene Dimer in Polymerization Grade Butadiene, Method of Test for (ASTM D1024-53)	.25
Z11.80-1953	★Boiling Point Range of Polymerization-Grade Butadiene, Method of Test for (ASTM D1088-53)	.25
Z11.81-1953	★Carbonyl Content of Butadiene, Test for (ASTM D1089-53)	*In press*
Z11.82-1953	★Water Tolerance for Aircraft Fuels, Method of Test for (ASTM D1094-53)	.25
Z11.83-1953	★ASTM-IP Petroleum Measurement Tables (ASTM D1250-53)	*In press*

Z12 — Dust Explosions:

Bound volume, 289 pages, $3.00 (parts also sold separately)

Z12.1-1946	Pulverized-Coal Systems, Safety Code for the Installation and Operation of (NFPA 60A)	.35
Z12.2-1944	Starch Factories, Safety Code for the Prevention of Dust Explosions in (NFPA 61A)	.25
Z12.3-1953	Flour and Feed Mills, Safety Code for the Prevention of Dust Explosions in (NFPA 61C)	.35
Z12.4-1953	Terminal Grain Elevators, Safety Code for the Prevention of Dust Explosions in (NFPA 61B)	.35
Z12.5-1953	Woodworking Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 663)	.25
Z12.6-1953	Sugar and Cocoa, Safety Code for Pulverizing Systems for (NFPA 62)	.25
Z12.7-1953	Coal Pneumatic Cleaning Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 653)	.25
Z12.8-1946	Wood Flour Manufacturing Establishments, Safety Code for the Prevention of Dust Explosions in (NFPA 662)	.25
Z12.9-1953	Spice Grinding Plants, Safety Code for the Prevention of Dust Ignitions in (NFPA 656)	.25
Z12.10-1943	Inert Gas for Fire and Explosion Prevention, Safety Code for the Use of (NFPA 12A)	.25

		Price
Z12.11-1953	Aluminum Bronze Powder, Safety Code for the Prevention of Dust Explosions in the Manufacture of (NFPA 651)	.25
Z12.12-1950	Sulphur Dust Explosions and Fires, Safety Code for the Prevention of (NFPA 655)	.25
Z12.13-1953	Country Grain Elevators, Code for the Prevention of Dust Ignitions in (NFPA 64)	.25
Z12.14-1943	Grain Elevators and Storage Units, Suggested Good Practices for the Application of Suction and Venting for the Control of Dust in (NFPA 661)	.25
Z12.15-1953	Magnesium Powder or Dust, Code for Explosion and Fire Protection in Plants Producing or Handling (NFPA 652) ..	.25
Z12.16-1946	Plastics Industry, Safety Code for the Prevention of Dust Explosions in the (NFPA 654)	.35
Z12.17-1946	Pulverized Fuel Systems, Safety Code for the Installation of (NFPA 60)	.50
Z12.18-1953	Confectionery Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 657)	.25
Z16.1-1945	†Method of Compiling Industrial Injury Rates	.35
Z16.2-1941	†Compiling Industrial Accident Causes Part 1—Selection of Accident Factors Part 2—Detailed Classification of Accident Factors	1.25
Z17.1-1936 R1951	†Preferred Numbers	.50
Z20.3-1950	Places of Outdoor Assembly (Grandstands and Tents) (NFPA 102)	.25
Z21 — Gas-Burning Appliances, Approval and Installation Requirements:		
Z21.1-1952	Domestic Gas Ranges, Approval Requirements for, with Addenda Z21.1a-1953.. (★Z21.1a-1953 sold separately ....25¢)	2.25
Z21.2-1949 R1952	Gas Hose for Portable Gas Appliances, Listing Requirements on	1.00
Z21.3-1940	Hotel and Restaurant Ranges and Unit Broilers, Approval Requirements for, with Addenda Z21.3a-1946 ..... (Z21.3a-1946 sold separately.....40¢)	1.40
Z21.5-1953	★Domestic Gas Clothes Dryers, Approval Requirements for	2.00
Z21.6-1949 R1952	Domestic Gas-Fired Incinerators, Approval Requirements for, with Addenda Z21.6a-1953 ..... (★Z21.6a-1953 sold separately.....25¢)	1.75
Z21.8-1948 R1952	Installation of Domestic Gas Conversion Burners, Requirements for	1.00
Z21.9-1948 R1952	Hot Plates and Laundry Stoves, Approval Requirements for, with Addenda Z21.9a-1949 ..... (Z21.9a-1949 sold separately.....40¢)	1.40
Z21.10-1953	★Gas Water Heaters, Approval Requirements for	2.00
Z21.11-1949	Gas-Fired Room Heaters, Approval Requirements for, with Addenda Z21.11a-1950 and Z21.11b-1953 ..... Z21.11a-1950 sold separately .....40¢; (★Z21.11b-1953 sold separately.....25¢)	2.65
Z21.12-1937 R1950	Draft Hoods, Listing Requirements for..	.50
Z21.13.1-1951	Steam and Hot Water Boilers, Volume I, 48 pages	2.00
Z21.13.2-1951	Gravity and Forced Air Central Furnaces, Volume II, with addenda Z21.13.2a-1952 (Z21.13.2a-1952 sold separately....50¢)	2.50
Z21.13.3-1951	Gravity and Fan Type Floor Furnaces, Volume III	2.00
Z21.13.4-1953	★Gravity and Fan Type Vented Recessed Heaters, Volume IV	2.00
Z21.15-1944 R1952	Gas Valves, Listing Requirements for, with Addenda Z21.15a-1949 ..... (Z21.15a-1949 sold separately .....20¢)	.70
Z21.16-1951	Gas Unit Heaters, Approval Requirements for, with Addenda Z21.16a-1953..... (★Z21.16a—1953 sold separately ....25¢)	1.75
Z21.17-1948 R1952	Domestic Gas Conversion Burners, Listing Requirements for	2.00
Z21.18-1934	Domestic Gas Appliance Pressure Regulators, Listing Requirements for	*Under revision*
Z21.19-1942 R1950	Refrigerators Using Gas Fuel, Approval Requirements for	1.00
Z21.20-1951	Automatic Pilots, Listing Requirements for	1.00
Z21.21-1952	Automatic Valves for Gas Appliances, Listing Requirements for	1.00
Z21.22-1935 R1950	Relief and Automatic Gas Shut-off Valves for Use on Water Heating Systems, Listing Requirements for	.40
Z21.23-1940 R1950	Gas Appliance Thermostats, Listing Requirements for	.50
Z21.24-1941 R1947	Semi-Rigid Gas Appliance Tubing and Fittings, Listing Requirements for	.50
Z21.26-1941 R1950	Attachable Gas Water Heating Units, Listing Requirements for	*Under revision—Out of print*
Z21.27-1940	Hotel and Restaurant Deep Fat Fryers, Approval Requirements for, with Addenda Z21.27a-1946 ..... (Z21.27a-1946 sold separately.....40¢)	1.40
Z21.28-1948	Portable Gas Baking and Roasting Ovens, Approval Requirements for	2.00
Z21.29-1941 R1950	Furnace Temperature Limit Controls and Fan Controls, Listing Requirements for..	.50
Z21.30-1950	Installation of Gas Piping and Gas Appliances in Buildings (Not Applicable to Undiluted Liquefied Petroleum Gas)	.25
Z21.31-1941 R1947	Gas Counter Appliances, Approval Requirements for..	*Under revision—Out of print*
Z21.32-1942 R1950	Gas Appliance Connectors of Flexible Metal Tubing and Fittings, Listing Requirements for	.50
Z21.33-1950	Installation of Gas-Burning Equipment in Power Boilers, Requirements for	1.00
Z21.34-1942 R1950	Gas-Fired Duct Furnaces, Approval Requirements for ..	*Under revision—Out of print*
Z21.35-1945 R1950	Gum Protective Devices, Listing Requirements for	.50
Z21.37-1948 R1952	Dual Oven Type Combination Gas Ranges, Approval Requirements for	1.00
Z21.38-1953	Installation of Gas Conversion Burners in Domestic Ranges, Requirements for ..	.25
Z21.39-1953	Gas Conversion Burners for Domestic Ranges, Listing Requirements for	2.00
Z22 — Motion Pictures:		
This number is being discontinued. Standards assigned Z22 numbers are listed under the new number, PH22.		
Z23.1-1939 R1950	Sieves for Testing Purposes, Specifications for (ASTM E11-39; AASHO M92-42)..	.25
Z24 — Acoustics, Vibration and Mechanical Shock:		
	Sound Measurement Package, in Binder, consisting of Z24 series listed below, $7.50	
Z24.1-1951	†Acoustical Terminology	1.50
Z24.2-1942	†Noise Measurement	.50
Z24.3-1944	†Sound Level Meters for Measurement of Noise and Other Sounds	.50

		Price
Z24.4-1949	†Pressure Calibration of Laboratory Standard Pressure Microphones, Method for the	.75
Z24.5-1951	†Audiometers for General Diagnostic Purposes	.50
Z24.7-1950	†Apparatus Noise Measurement, Test Code for	.50
Z24.8-1949	†Laboratory Standard Pressure Microphones, Specification for	.50
Z24.9-1949	†Coupler Calibration of Earphones, Method for the	.75
Z24.10-1953	†Octave-Band Filter Set for the Analysis of Noise and Other Sounds, Specification for an	.50
Z24.12-1952	†Pure-Tone Audiometers for Screening Purposes, Specification for	.50
Z24.13-1953	★†Speech Audiometers, Specification for	.50
Z24.14-1953	†Measurement of Characteristics of Hearing Aids, Method for	.50

Z24-X2 The Relations of Hearing Loss to Noise Exposure $1.50

64 pp, 6 x 9 in.. 18 figures, 8 tables, heavy paper cover. This report by Exploratory Subcommittee Z24-X-2 of Sectional Committee Z24 on Acoustics, Vibration, and Mechanical Shock analyzes the noise problem. Representing one of the most comprehensive surveys ever made, it tells what factors enter into industrial loss of hearing; how much certain types of noise affect hearing; what allowance to make for recovery of hearing after noise exposure; what loss of hearing to expect of different age groups.

Z25.1-1940 R1947	†Rules for Rounding Off Numerical Values	.35
Z26.1-1950	†Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Safety Code for	1.00
Z30.2-1953	Thermal Analysis of Steel (ASTM E14-51T)	.25
Z31-1933	Marking of Gold Filled and Rolled Gold Plate Articles Other Than Watchcases (CS47-34) ..... *Out of print*	
Z33.1-1950	Regulations for the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal (NFPA 91; NBFU 91)	.25
Z34.1-1947	†Practice for Certification Procedures	.35
Z35.1-1941 R1945	†Industrial Accident Prevention Signs, Specifications for	.75

Z37 — Allowable Concentrations of Toxic Dusts and Gases:
(Special price of series, $4.00)

Z37.1-1941	†Carbon Monoxide, Allowable Concentration of	.35
Z37.2-1941	†Hydrogen Sulfide, Allowable Concentration of	.35
Z37.3-1941	†Carbon Disulfide, Allowable Concentration of	.35
Z37.4-1941	†Benzene, Allowable Concentration of	.35
Z37.6-1948	†Manganese, Allowable Concentration of	.35
Z37.7-1943	†Chromic Acid and Chromates, Allowable Concentration of	.35
Z37.8-1943	†Mercury, Allowable Concentration of	.35
Z37.10-1948	†Xylene, Allowable Concentration of	.35
Z37.11-1943	†Lead and Certain of Its Inorganic Compounds, Allowable Concentration of	.35
Z37.12-1943	†Toluene, Allowable Concentration of	.35
Z37.13-1944	†Oxides of Nitrogen, Allowable Concentration of	.35
Z37.14-1944	†Methanol, Allowable Concentration of	.35
Z37.16-1944	†Formaldehyde, Allowable Concentration of	.35
Z37.18-1949	†Methyl Chloride, Allowable Concentration of	.35
Z37.19-1946	†Trichloroethylene, Allowable Concentration of	.35

Z38 — Photography (other than Cinematography):

This number is being discontinued. Standards assigned Z38 numbers are listed under the appropriate new number:— PH1, Films, Plates and Paper; PH2, Photographic Sensitometry; PH3, Photographic Apparatus; PH4, Photographic Processing.

Z39.1-1943	†Reference Data and Arrangement of Periodicals	.25

Z41 — Specifications for Protective Occupational Footwear (American War Standards):

Z41.1-1944	†Men's Safety-Toe Shoes	.75
Z41.3-1944	†Men's Conductive Shoes	
Z41.4-1944	†Men's Explosives - Operations (Non-sparking) Shoes	
Z41.5-1944	†Men's Electrical-Hazards Shoes	
Z41.6-1944	†Men's Foundry (Molders) Shoes	
Z41.2-1944	†Women's Safety-Toe (Oxford) Shoes	*Out of print*
Z41.7-1944	†Women's Safety-Toe (High) Shoes	
Z41.8-1944	†Women's Explosives - Operations (Non-sparking) Shoes	
Z41.9-1944	†Women's Conductive Shoes	

Z43-1941	†Grinding, Polishing and Buffing Equipment Sanitation	.75
Z48.1-1942	†Marking Compressed Gas Cylinders to Identify Content, Method of	.25
Z49.1-1950	Electric and Gas Welding and Cutting Operations, Safety in	.50
Z50.1-1947	†Bakery Equipment, Safety Code for	1.00
Z52.43-1944	Photographic Flash Lamps, including Supplement Z52.43a (Federal Specification W-L-122 and Supplement (American War Standard) ..... *Under revision*	.10

For other standards on Photography (other than Cinematography) see also PH1, Films, Plates and Paper; PH2, Photographic Sensitometry; PH3, Photographic Apparatus; PH4, Photographic Processing.

For Standards on Motion Pictures, see PH22.

Z53.1-1953	★†Marking Physical Hazards and the Identification of Certain Equipment, Safety Color Code for	.50
Z54.1-1946	†Industrial Use of X-Rays, Safety Code for the (American War Standard)	1.50
Z55.1-1950	†Gray Finishes for Industrial Apparatus and Equipment	.35
	Color Chips representing Gray Finishes according to Z55.1-1950 ..... *Out of print*	

Z56 Nationally Recognized Standards in State Laws and Local Ordinances $1.00

44-page report of ASA Committee Z56 on Model Laws and Ordinances published by ASA to collect ideas and discussion on the question, "How can nationally recognized standards legally be used in state laws and local ordinances?" Points out how lack of uniformity in state and local technical requirements increases costs and reduces public safety; analyzes the need for legal methods to permit widespread use of nationally recognized standards to bring outmoded requirements up to date with new technical developments; summarizes the present status of the "adoption by reference" method; and discusses the method of making compliance with national standards *prima facie* evidence of compliance with the law.

		Price
Z58.1.1-1953	Nomenclature for Radiometry and Photometry	.25
Z58.1.2-1952	†Colorimetry, Nomenclature and Definitions in the Field of	.50
Z58.7.1-1951	†Spectrophotometric Measurement for Color, Method of	.50
Z58.7.2-1951	†Determination of Color Specifications, Method for	
Z58.7.3-1951	†Expressing Color Specifications, Alternative Methods for	
Z60.1-1952	Nursery Stock — Horticultural Standards (AAN)	.50
Z61.1-1949	†Home Cooking and Baking Utensils, Dimensions, Tolerances, and Terminology for	.35

Z63 A Glossary of Terms in Nuclear Science and Technology (Proposed American Standard; published for trial and criticism) Complete, in binder, $7.00

This Glossary consists of the following nine sections. Each lists terms peculiar to its field, those used in the field with a different sense or with different emphasis from that most commonly understood in other connections, and those used elsewhere in the same way but so infrequently as to be unfamiliar. Each section also includes an alphabetical listing of the terms included in all the sections. Sections VIII and IX are published under one cover. All others are available separately.

I	General Terms	$2.50
II	Reactor Theory	$1.50
III	Reactor Engineering	$ .75
IV	Chemistry	$ .60
V	Chemical Engineering	$ .60
VI	Biophysics and Radiobiology	$ .60
VII	Instrumentation	$1.00
VIII	Isotopes Separation	$1.20
IX	Metallurgy	

		Price
Z67.1-1953	★Gross Calorific Value and Net Calorific Value of Solid and Liquid Fuels, Definitions of the Terms (ASTM D407-44)	.25
Z68.1-1953	Calorific Value of Gaseous Fuels by Water Flow Calorimeter, Method of Test for (ASTM D900-48)	*In press*
Z69.1-1953	Specific Gravity of Gaseous Fuels, Methods of Test for (ASTM D1070-52)	.40
Z71.1-1954	★Thermometers, Specifications for (ASTM E1-53)	*In press*

CS — Commercial Standards

The following Commercial Standards, promulgated by the National Bureau of Standards, have been approved by ASA:

CS8-41	Gage Blanks (American Standard B47.1-1941)	*Under revision*
CS19-32	Foundry Patterns of Wood (American Standard B45.1-1932)	*Out of print*
CS47-34	Marking of Gold Filled and Rolled Gold Plate Articles Other Than Watchcases (American Standard Z31-1933)	.05
CS49-34	Chip Board, Laminated Chip Board, and Miscellaneous Boards for Bookbinding Purposes	*Out of print*
CS50-34	Binders Board	.05
CS51-35	Marking Articles Made of Silver in Combination with Gold	.05
CS53-35	Colors and Finishes for Cast Stone	.05
CS54-35	Mattresses for Hospitals	*Out of print*
CS55-35	Mattresses for Institutions	*Out of print*
CS57-40	Book Cloths, Buckrams and Impregnated Fabrics for Bookbinding Purposes except Library Bindings	.05
CS67-38	Marking Articles Made of Karat Gold	*Out of Print*
CS99-42	Gas Floor Furnaces (Gravity Circulating Type)	.05

American Safety Standards

(Special Price of Complete Set, $50.00)

(These standards are also included in the preceding general list)

		Price
A2.1-1942	Fire Tests of Building Construction and Materials, Methods of (ASTM E119-41) *Under revision*	
A2.2-1942	Fire Tests of Door Assemblies, Methods of (ASTM E152-41)	.25
A9.1-1953	Building Exits Code (NFPA 101; AIA 40-B-7)	1.00
A10.1-1951	Manual of Accident Prevention in Construction	3.00
A10.2-1944	†Building Construction, Safety Code for	1.75
A11.1-1952	Industrial Lighting	.50
A12-1932	†Floor and Wall Openings, Railings and Toe Boards, Safety Code for	.50
A13-1928	Identification of Piping Systems, Scheme for the	.60
A14.1-1952	†Portable Wood Ladders, Safety Code for	.75
A17.1-1937	Elevators, Dumbwaiters, and Escalators, Safety Code for, with Supplement A17.3-1942	1.50
A17.1.S-1953	★Private Residence Elevators, Safety Code for	1.00
A17.2-1945	Elevators, Inspection of (Inspectors' Manual)	1.50
A23.1-1948	School Lighting (AIA 31-F-28)	.50
A39-1933	†Window Cleaning *Under revision—Out of print*	
A85-1942	†Protective Lighting for Industrial Properties (American War Standard)... *Out of print*	
A90.1-1949	Manlifts, Safety Code for	.55
B7.1-1947	Use, Care, and Protection of Abrasive Wheels, Safety Code for	.75
B8-1932	†Protection of Industrial Workers in Foundries, Safety Code for	.35
B9.1-1953	★Mechanical Refrigeration, Safety Code for (ASRE Circular 15-R)	1.00
B11.1-1945	†Power Presses and Foot and Hand Presses, Safety Code for	1.25
B13-1924	Logging and Sawmill Safety Code (NBS Handbook H5) ..... *Out of print*	
B15.1-1953	Mechanical Power-Transmission Apparatus, Safety Code for	1.00
B19-1938	Compressed Air Machinery and Equipment, Safety Code for *Under revision—Out of print*	
B20.1-1947	Conveyors, Cableways and Related Equipment, Safety Code for	.90
B24.1-1952	†Forging and Hot Metal Stamping, Safety Code for	1.00
B28.1-1949	†Mills and Calenders in the Rubber Industry, Safety Code for	1.00
B30.1-1943 R1952	Jacks, Safety Code for	.50
B30.2-1943 R1952	Cranes, Derricks, and Hoists, Safety Code for	1.80
B31.1-1951	Code for Pressure Piping, including Supplement B31.1a-1953, and B31.1.8-1952, Gas Transmission and Distribution Piping Systems (Section 8) (B31.1a-1953 also sold separately $1.00) (B31.1.8-1952 also sold separately, $1.25)	5.25
B56.1-1950	Industrial Power Trucks, Safety Code for	.85
C1-1951	National Electrical Code (NBFU 70; Pocket edition) (Paper bound NFPA 70; 4¾ x 7¼ in. ....$1.00) (Cloth bound NFPA 70; 6 x 9 in., 576 pages....$3.00)	.10

		Price
C2 — National Electrical Safety Code (NBS Handbook H30):		
C2.1-1941 R1947	Installation and Maintenance of Electrical Supply Stations, Safety Rules for the (NBS Handbook H31) (Also sold separately.....10¢)	1.75
C2.2-1941 R1947	Installation and Maintenance of Electric Supply and Communication Lines, Safety Rules for the (NBS Handbook H32).... (Not sold separately)	
C2.3-1941 R1947	Installation and Maintenance of Electric Utilization Equipment, Safety Rules for the (NBS Handbook H33) (Not sold separately)	
C2.4-1939 R1947	Operation of Electric Equipment and Lines, Safety Rules for the (NBS Handbook H34) (Also sold separately.....20¢)	
C2.5-1940 R1947	Radio Installations, Safety Rules for (NBS Handbook H35) (Also sold separately.....15¢)	
C5 — Protection against Lightning, Code for (NBS Handbook H46; NFPA 78):		
C5.1-1953	Part I, Protection of Persons	.40
C5.2-1953	Part II, Protection of Buildings and Miscellaneous Property	
C5.3-1953	Part III, Protection of Structures Containing Flammable Liquids and Gases	
C74-1942	†Machine Tool Electrical Standards (American War Standard) ..... *Out of print*	
D6.1-1948	Uniform Traffic Control Devices for Streets and Highways, Manual on	.75
D7.1-1941	†Inspection Requirements for Motor Vehicles *Under revision—Out of print*	
D8.1-1951	Railroad Highway Grade Crossing Protection (AAR Bulletin 3)	.50
D10.1-1951	Adjustable Face Traffic Control Signal Head Standards (ITE Technical Report 1)	.50
D11.1-1943	Pre-Timed, Fixed Cycle, Traffic Signal Controllers (ITE Technical Report 2)...	.50
D12.1-1953	Street and Highway Lighting	.50
D13.1-1950	Traffic-Actuated, Traffic Signal Controllers and Detectors, Specifications for	.50
J6 — Specifications for Rubber Protective Equipment for Electrical Workers:		
J6.1-1950	Rubber Insulating Line Hose (ASTM D1050-49T)	.50
J6.2-1950	Rubber Insulator Hoods (ASTM D1049-49T)	
J6.4-1950	Rubber Insulating Blankets (ASTM D1048-49T)	
J6.5-1950	Rubber Insulating Sleeves (ASTM D1051-49T)	
J6.3-1945	†Leather Protective Gloves (American War Standard)	.25
J6.6-1952	Rubber Insulating Gloves, Specifications for (ASTM D120-52T)	.25
K13.1-1950	†Identification of Gas-Mask Canisters, Safety Code for	.35
L1.1-1947	†Textile Safety Code	.50

		Price
L18 — Specifications for Protective Occupational (Safety) Clothing (American War Standards):		
L18.1-1944	†Leather Aprons	.50
L18.2-1944	†Cape Sleeves and Bibs	
L18.3-1944	†Knee-Length Leggings	
L18.4-1944	†Leather Coats	.50
L18.5-1944	†Leather Overalls	
L18.6-1944	†Leather Sleeves	
L18.7-1944	†Welders' Leather Gauntlet Gloves	.50
L18.8-1944	†Protective Leather Gloves, Steel-Stapled	
L18.9-1944	†Asbestos Gloves	
L18.10-1944	†Asbestos Gloves, Leather Reinforced	
L18.11-1944	†Asbestos Mittens	
L18.12-1944	†Asbestos Mittens, Leather Reinforced	
L18.14-1944	†Asbestos Aprons (Bib Type)	.50
L18.15-1944	†Asbestos Cape Sleeves and Bibs	
L18.16-1944	†Asbestos Leggings (Knee and Hip Length)	
L18.17-1944	†Asbestos Coats	
L18.18-1945	†Leather One-Finger Mittens	.50
L18.19-1945	†Leather Mittens	
L18.20-1945	†Asbestos One-Finger Mittens	
L18.21-1945	†Flame-Resistant Fabric Aprons (Bib Type)	.50
L18.22-1945	†Flame-Resistant Fabric Leggings (Knee and Hip Length)	
L18.23-1945	†Flame-Resistant Fabric Coats	
L18.24-1945	†Flame-Resistant Fabric Pants	
L18.25-1945	†Flame-Resistant Fabric Coveralls	
L18.26-1945	†Flame-Resistant Fabric Spats	.50
L18.27-1945	†Leather Spats	
L18.28-1945	†Asbestos Spats	
L18.29-1945	†Chemical-Resistant Gloves	.35
M2.1-1951	Installing and Using Electrical Equipment in Coal Mines, Safety Rules for (BMTP 402)	.20
M11-1927	Wire Rope for Mines	*Under revision—Out of print*
M12.1-1946	†Construction and Maintenance of Ladders and Stairs for Mines	.35
M13-1925 R1942	†Rock-Dusting Coal Mines to Prevent Coal Dust Explosions	.25
M14-1930	†Explosives in Bituminous Coal Mines, Use of	.35
M15-1931	†Coal Mine Transportation, Safety Code for	.35
M17-1930	†Fire Fighting Equipment in Metal Mines	*Gratis*
M24-1932	†Installing and Using Electrical Equipment in Metal Mines, Safety Rules for	*Gratis*
O1.1-1944	†Woodworking Machinery, Safety Code for	.75
P1-1936	†Paper and Pulp Mills, Safety Code for	*Under revision—Out of print*
Z2-1938	Protection of Heads, Eyes, and Respiratory Organs, Safety Code for (NBS Handbook H24)	*Under revision—Out of print*
Z4.1-1935	†Industrial Sanitation in Manufacturing Establishments, Safety Code for	*Under revision—Out of print*
Z4.2-1942	†Drinking Fountains, Specifications for	.25
Z4.3-1935	Sanitary Privy (Supplement 108 to the Public Health Reports)	*Under revision—Out of print*
Z8-1941	†Laundry Machinery and Operations, Safety Code for	.35
Z9	†Fundamentals Relating to the Design and Operation of Exhaust Systems (Report published for comment)	*Out of print*
Z9.1-1951	†Ventilation and Safe Operation of Open-Surface Tanks	.75

		Price
Z12 — Dust Explosions: *Bound volume, 288 pages, $3.00 (parts also sold separately)*		
Z12.1-1946	Pulverized-Coal Systems, Safety Code for the Installation and Operation of (NFPA 60A)	.35
Z12.2-1944	Starch Factories, Safety Code for the Prevention of Dust Explosions in (NFPA 61A)	.25
Z12.3-1953	Flour and Feed Mills, Safety Code for the Prevention of Dust Explosions in (NFPA 61C)	.35
Z12.4-1953	Terminal Grain Elevators, Safety Code for the Prevention of Dust Explosions in (NFPA 61B)	.35
Z12.5-1953	Woodworking Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 663)	.25
Z12.6-1953	Sugar and Cocoa, Safety Code for Pulverizing Systems for (NFPA 62)	.25
Z12.7-1953	Coal Pneumatic Cleaning Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 653)	.25
Z12.8-1946	Wood Flour Manufacturing Establishments, Safety Code for the Prevention of Dust Explosions in (NFPA 662)	.25
Z12.9-1953	Spice Grinding Plants, Safety Code for the Prevention of Dust Ignitions in (NFPA 656)	.25
Z12.10-1943	Inert Gas for Fire and Explosion Prevention, Safety Code for the Use of (NFPA 12A)	.25
Z12.11-1953	Aluminum Bronze Powder, Safety Code for the Prevention of Dust Explosions in the Manufacture of (NFPA 651)	.25
Z12.12-1950	Sulphur Dust Explosions and Fires, Safety Code for the Prevention of (NFPA 655)	.25
Z12.13-1953	Country Grain Elevators, Code for the Prevention of Dust Ignitions in (NFPA 64)	.25
Z12.14-1943	Grain Elevators and Storage Units, Suggested Good Practices for the Application of Suction and Venting for the Control of Dust in (NFPA 661)	.25
Z12.15-1953	Magnesium Powder or Dust, Code for Explosion and Fire Protection in Plants Producing or Handling (NFPA 652)	.25
Z12.16-1946	Plastics Industry, Safety Code for the Prevention of Dust Explosions in the (NFPA 654)	.35
Z12.17-1946	Pulverized Fuel Systems, Safety Code for the Installation of (NFPA 60)	.50
Z12.18-1953	Confectionery Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 657)	.25
Z16.1-1945	†Method of Compiling Industrial Injury Rates	.35
Z16.2-1941	†Compiling Industrial Accident Causes Part 1—Selection of Accident Factors Part 2—Detailed Classification of Accident Factors	1.25
Z20.3-1950	Places of Outdoor Assembly, Grandstands and Tents (NFPA 102)	.25
Z21.30-1950	Installation of Gas Piping and Gas Appliances in Buildings (Not Applicable to Undiluted Liquefied Petroleum Gas)	.25
Z26.1-1950	†Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Safety Code for	1.00

		Price
Z33.1-1950	Regulations for the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal (NFPA 91; NBFU 91)	.25
Z35.1-1941 R1945	†Industrial Accident Prevention Signs, Specifications for	.75
Z37 — Allowable Concentrations of Toxic Dusts and Gases:		
Z37.1-1941	†Carbon Monoxide, Allowable Concentration of	.35
Z37.2-1941	†Hydrogen Sulfide, Allowable Concentration of	.35
Z37.3-1941	†Carbon Disulfide, Allowable Concentration of	.35
Z37.4-1941	†Benzene, Allowable Concentration of	.35
Z37.6-1948	†Manganese, Allowable Concentration of	.35
Z37.7-1943	†Chromic Acid and Chromates, Allowable Concentration of	.35
Z37.8-1943	†Mercury, Allowable Concentration of	.35
Z37.10-1948	†Xylene, Allowable Concentration of	.35
Z37.11-1943	†Lead and Certain of Its Inorganic Compounds, Allowable Concentration of	.35
Z37.12-1943	†Toluene, Allowable Concentration of	.35
Z37.13-1944	†Oxides of Nitrogen, Allowable Concentration of	.35
Z37.14-1944	†Methanol, Allowable Concentration of	.35
Z37.16-1944	†Formaldehyde, Allowable Concentration of	.35
Z37.18-1949	†Methyl Chloride, Allowable Concentration of	.35
Z37.19-1946	†Trichloroethylene, Allowable Concentration of	.35
Z41 — Specifications for Protective Occupational Footwear (American War Standards):		
Z41.1-1944	†Men's Safety-Toe Shoes	.75
Z41.3-1944	†Men's Conductive Shoes	
Z41.4-1944	†Men's Explosives-Operations (Non-sparking) Shoes	
Z41.5-1944	†Men's Electrical-Hazards Shoes	
Z41.6-1944	†Men's Foundry (Molders) Shoes	
Z41.2-1944	†Women's Safety-Toe (Oxford) Shoes	*Out of print*
Z41.7-1944	†Women's Safety-Toe (High) Shoes	
Z41.8-1944	†Women's Explosives-Operations (Non-sparking) Shoes	
Z41.9-1944	†Women's Conductive Shoes	
Z43-1941	†Grinding, Polishing and Buffing Equipment Sanitation	.75
Z48.1-1942	†Marking Compressed Gas Cylinders to Identify Content, Method of	.25
Z49.1-1950	Electric and Gas Welding and Cutting Operations, Safety in	.50
Z50.1-1947	†Bakery Equipment, Safety Code for	1.00
Z53.1-1953	★†Marking Physical Hazards and the Identification of Certain Equipment, Safety Color Code for	.50
Z54.1-1946	†Industrial Use of X-Rays, Safety Code for the (American War Standard)	1.50

PM87.1 American Safety Standards ..... Free

More than 160 American Safety Standards, many widely used in industry and some incorporated in government regulations, are listed and described in this booklet. A brief commentary on each standard tells what the standard covers and outlines its requirements or recommendations. A comprehensive subject index makes it possible to locate any subject covered in any of the standards quickly and easily. In addition to approved American Safety Standards, the booklet also includes a list of safety standards under development.

ASA Special Publications

PM125 Constitution, By-Laws, and Procedure.....Free

This booklet sets forth the policy, methods, and machinery for the development and approval of American Standards. It contains the Constitution, the By-Laws, and the Procedure of the American Standards Association; an organization chart of the association; and a statement on the basic policies underlying ASA work. It is published as an aid to those interested in starting projects leading to voluntary American Standards and to those engaged in the work of committees operating under ASA Procedures.

PM137 The Members of ASA.....Free

One hundred trade associations, technical societies, and consumer groups, some 2300 companies, as well as state and city governments and colleges and universities, are members of the American Standards Association. This booklet is a complete listing of these members, including the Officers and Board of Directors of the Association, the Member-Bodies, the Associate Members, and the Company Members.

PM129 The Strange Case of the Seven-Sided Post-Hole.....No charge for single copies

In lighthearted and whimsical fashion this booklet simplifies a complex subject and conveys a serious message. It tells why and how standards are developed, who benefits from them, and why. It shows the dislocation, wear and tear, and loss that result when available standards are not used, or are not used properly. It explains how voluntary standards arrived at by all-parties-at-interest can largely eliminate the need for federal regulation.

PM143 Proceedings of the Fourth National Standardization Conference and Thirty-Fifth Annual Meeting of ASA.....$3.00

This is the fourth in a series of published proceedings of ASA's National Standardization Conferences and Annual Meetings. The first volume, "Standards—Spearhead of Industrial Mobilization" ($1.00), examines the role of standards in the rapidly shifting economy. The second, "Strenghtening America Through Standards" ($1.00), furnishes the keynote for discusisons on industrial standards for defense production. The third volume, "Standards —Engineering Tools for Industry" ($2.00), shows how standards can be used as an effective engineering and management tool. As a special bonus, the complete set at no additional charge is included on request with the purchase of PM143.

PM140 Standards Are Your Business.....Single copies free

Outlines the philosophy and objectives of the voluntary standards movement in this country, including a section on Federal Government policy toward industry standards. Cites specific examples of recent savings through standardization by leading U. S. corporations.

PM141 Through History with Standards.....Single copies Free

The dry wit of its cartoons and apt quotations do not belie the gems of information this booklet offers. Traces progress of standards from King Henry I of England to the present.

PM142 The Library of Standards.....Free

A pocket-sized guide to ASA's library. Implicit in its subtitle, "What it is, What it contains, What it can do for you." A compact informer on the nation's most complete reference source on domestic and foreign standards.

Specials Can Be Licked. By H. Thomas Hallowell, Jr

per hundred.....$5.00

per copy.....25

This breezy and entertaining story tells how one company increased profits and cut losses by actively promoting the use of standards. Reprinted from STANDARDIZATION, July, 1952.

PM87.1 American Safety Standards.....Free

More than 160 American Safety Standards, many widely used in industry and some incorporated in government regulations, are listed and described in this booklet. A brief commentary on each standard tells what the standard covers and outlines its requirements or recommendations. A comprehensive subject index makes it possible to locate any subject covered in any of the standards quickly and easily. In addition to approved American Safety Standards, the booklet also includes a list of safety standards under development.

PM117 Style Manual for American Standards.....$1.00

The manual serves as a guide in the preparation and publication of American Standards, codifying the editorial practices used in published standards. The principal sections include outline form and numbering; capitalization; spelling; abbreviations for technical terms; use of italics; basic rules for tables and illustrations; standard bibliographical style; and general format (with illustrations).

Z56 Nationally Recognized Standards in State Laws and Local Ordinances.....$1.00

This 44-page report of the ASA Committee Z56 on Model Laws and Ordinances has been published by the ASA to get ideas and discussion on the question, "How can nationally recognized standards legally be used in state laws and local ordinances?" It points out how lack of uniformity in state and local technical requirements increases costs and reduces public safety; analyzes the need for legal methods to permit widespread use of nationally recognized standards to bring outmoded requirements up to date with new technical developments; summarizes the present status of the "adoption by reference" method; and discusses the method of making compliance with national standards *prima facie* evidence of compliance with the law.

Dollar Savings Through Standards.....$1.00

This 32-page document is a report of a survey made through the American Standards Association for the Economic Cooperation Administration to obtain data on savings derived from the use of standards by American industry. Companies representing 81 industries and industrial products have contributed detailed reports.

How to Check Quality of Surface Finish.....$ .50

What does "roughness" mean? What grade of finish is suitable for your job? How are surface finish comparison specimens used? How does the "gold standard" surface specimen differ from regular standard specimens? In this reprint three outstanding experts answer these questions and tell the "why" and the "how" of the American Standards on surface roughness. B46.1-1947 and B46.2-1952. The articles are "The 'Why' of the Surface Finish Standards," by James A. Broadston; "The Use of Standard Roughness Comparison Specimens," by Donald E. Williamson; "The 'Gold Standard' Precision Specimens of Surface Roughness," by C. R. Lewis. Reprinted from STANDARDIZATION, August, 1952.

Z24-X-2 The Relations of Hearing Loss to Noise Exposure.....$1.50

64 pp, 6 x 9 in., 18 figures, 8 tables, heavy paper cover report by Exploratory Subcommittee Z24-X-2 of Sectional Committee Z24 on Acoustics, Vibration, and Mechanical Shock analyzing the noise problem. Represents one of the most comprehensive surveys ever made. Tells what factors enter into industrial loss of hearing; how much certain types of noise affect hearing; what allowance to make for recovery of hearing after noise exposure; what loss of hearing to expect of different age groups.

AMERICAN STANDARDS ASSOCIATION
INCORPORATED

70 EAST FORTY-FIFTH STREET
NEW YORK 17, NEW YORK